

# PUBLIC HEALTH



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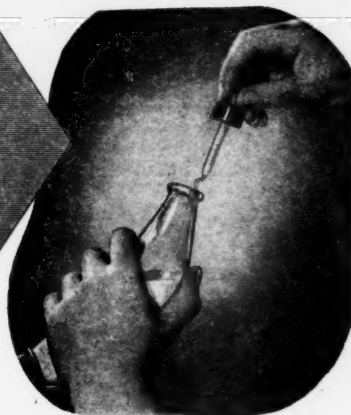
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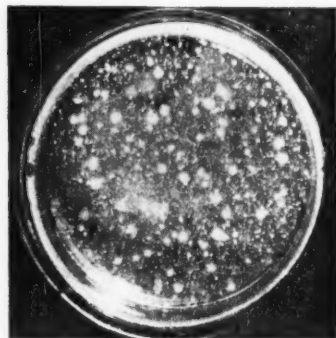
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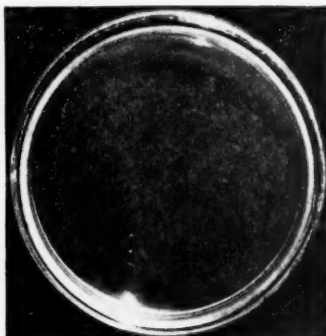
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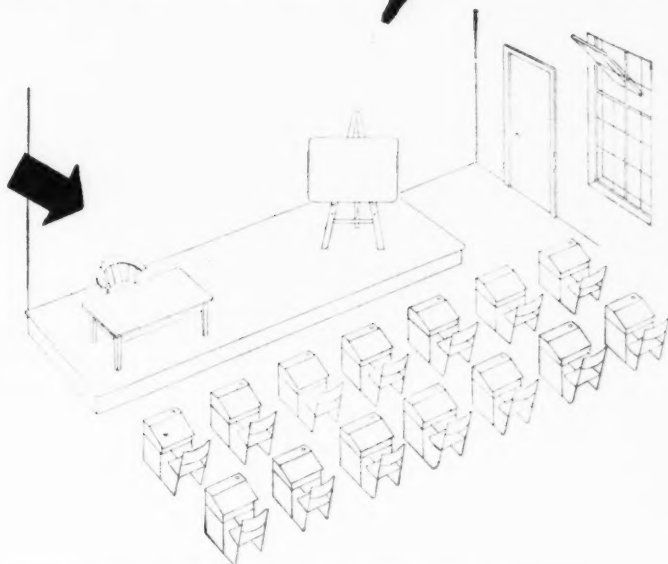
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## CONTENTS

EDITORIAL		PAGES	
Milk Borne Infections in Great Britain	33	Births, Marriages and Fertility in 1947	47
Cross-Infection in Children's Wards	34	Vital Statistics, England and Wales, June Quarter, 1949	48
Measles in London	35	Estimate of Births, September, 1949, to March, 1950	48
The Regression in Vaccination	35	Retirement of the Chief Medical Officer	48
Diphtheria Immunisation in Scotland	36	Model By-laws on Food Handling, Posters and Plaques	48
<b>SPECIAL ARTICLES</b>		<b>BOOK REVIEWS</b>	
A Health Service for Children. By Helen M. M. Mackay, M.D., F.R.C.P.	37	Canning Practice and Control (Osman Jones)	49
The Organisation of Child Health Services from the Point of View of a Maternity and Child Welfare Officer. By Jean M. Mackintosh, M.D., D.P.H., D.P.A.	41	Public Health Engineering—Vol. 1 (Earle R. Phelps et al.)	49
The Organisation of a Child Health Service. By Frederick Hall, C.R.E., M.D., D.P.H.	43	A Psychiatrist Looks at Tuberculosis (Eric Winkler)	49
<b>CORRESPONDENCE</b>		<b>OBITUARY</b>	
Organising the Child Health Service (Ethel R. Emslie)	44	A. E. Remmett Weaver, M.D., D.P.H.	40
"One Man Band" (Epidemiology (Hugh Paul))	45	<b>THE SOCIETY OF MEDICAL OFFICERS OF HEALTH</b>	
<b>NEWS AND REPORTS</b>		<b>NOTICE</b>	
Conference on Health Education	46	Servitors Hygiene Group	49
Auromycin and Chloromycetin	47	<b>REPORTS</b>	
		Northern Branch	51
		Yorkshire Branch	51
		Maternity and Child Welfare Group	52

## EDITORIAL

### Milk-Borne Infections in Great Britain

For several reasons, milk more than any other food is liable to give rise to infection. The fact that it is such a favourable medium for the growth of bacteria is important because in its handling it is so exposed to contamination while, in addition, it is commonly consumed raw. Also it is liable to be contaminated by organisms which can cause disease both in cows and in humans. The organisms which can bring about disease in humans may come from one of three sources: the cow itself may suffer from a disease transmissible to man; the milk can be infected by organisms of human origin implanted on the udder, which, though not causing disease in the cow, result in infection of the milk by streptococci and staphylococci; lastly, specific contamination of the milk after it has left the cow can result in human cases of typhoid and paratyphoid fevers, dysentery, diphtheria, scarlet fever and other streptococcal infections, most of the milk-borne staphylococcal infections and some salmonellae.

Sir William Savage, in a valuable article in the April, 1949, issue of the *British Journal of Social Medicine*, recently published, discusses the various aspects of milk-borne infections, bringing the information on this subject up to date. The actual incidence of milk-borne infections is unknown. In the years 1912 to 1937, 113 outbreaks were recorded: 40 of these were of scarlet fever and sore throat, 20 of diphtheria, 39 of the three enteric diseases, and 14 of gastro-enteritis. Milk-borne disease, however, is rarely obtrusive and the recorded outbreaks are probably only a proportion of the true incidence.

Tuberculosis is the most important disease in man derived from the cow. The bovine organism is responsible for up to 2% of the pulmonary disease, and for about 30% of the fatal non-pulmonary infection in children under five years of age. The incidence of bovine infection in humans depends on the prevalence in bovines, in which the true incidence is unknown. Information obtained from killings under the Tuberculosis Order is unreliable as a guide, while the findings in those animals killed at the slaughterhouses are selective. The most reliable indication of the extent of bovine tuberculosis is obtained from systematic tuberculin testing of cows and cattle. These figures, however, indicate only the proportion of animals infected and not the extent of the infection or the degree of infectivity to man. Again, the tests are selective in that they are applied in connection with the attested herd scheme, or for the formation of tuberculin tested herds. Furthermore, the figures relate to cattle and not to dairy cows.

The incidence of reactors in cattle in Great Britain is estimated at 17% to 18%, representing infection in 30% to 35% of cows. The figures vary not only between the different

counties but even in individual counties. It is felt, however, that the figure of 35% is a true index. This is a substantial reduction on that of 40% accepted for conditions a decade or so ago, and indicates material progress in the eradication of the disease. Although reactor cows are potential spreaders of tuberculosis, and while tubercle bacilli might get into the milk from tuberculous cows which are without udder lesions, tuberculosis of the udder is responsible for the heaviest infection of milk with tubercle bacilli. Clinically detectable udder tuberculosis is present in 0.2% to 0.3% of animals in unselected herds; the figures of incidence of those lesions demonstrable by pathological examination is probably twice as high. The varying incidence of tuberculosis in dairy cattle is reflected in the wide range of the presence of tubercle bacilli in milk. This has ranged from 3% to 15% or even more; for bulked milk the figures are much higher.

Sir William discusses in detail to what extent human tuberculosis is due to the bovine bacillus. It is probable that it causes a much higher proportion of respiratory tuberculosis than has been previously supposed. Percentages up to 4.7 have been found in Scotland, and it appears that, although the proportion of respiratory tuberculosis of bovine origin is unequally distributed, the figure diminishes in passing from the north of Scotland to the south of England. Although some of the sufferers may have contracted the infection by direct contact with tuberculous cattle, in the great majority of cases the alimentary canal was the portal of entry with infected milk as the probable source of infection.

The table of incidence of abdominal tuberculosis shows both the striking reduction since 1921, and the much higher rate to-day in rural districts than in urban, probably the result of the heat treatment of milk in the latter. In 1930 the proportion of heat-treated milk in the administrative county of London was 90%; by 1939 the figure was 98. In county boroughs the corresponding figures were 35 and 60. Greater London, Scotland, Canada and the Netherlands all show the same striking reduction in bovine infection, with the increasing ratio of pasteurised to unpasteurised milk. "Tuberculosis of bovine origin is becoming mainly a rural and small urban problem."

Of the three *Brucella* types, the only one which affects dairy cattle in Great Britain is the *abortus* strain, which can cause contagious abortion in cattle and undulant fever in man; 20% to 30% of herd milk samples contain living *Br. abortus* organisms, though the percentage varies widely in different districts. The disease in man is not notifiable, so the number of cases occurring is not known. Large-scale serum agglutination testing is the most reliable indication of infection. The findings from these agree with the generally accepted figure of about 500 new cases a year. Most of the recorded outbreaks are single

infections, though a number of small outbreaks in schools have been reported. The discrepancy between the high incidence of contagious abortion in cows and the comparatively few cases of undulant fever may be the result of the development of immunity by repeated minimal infection, or of the low virulence of *Br. abortus* to man. Although human infection is usually due to consumption of infected raw milk, some cases are the result of direct contact with infected animals by farm workers, veterinary surgeons, and those engaged in animal slaughter.

Streptococcal outbreaks may result from infection of milk by human strains implanted in the udder of the cow, or from specific contamination of milk after it leaves the cow. The human diseases spread are septic sore throat and scarlet fever, and more rarely streptococcal food poisoning. Although mastitis is prevalent in cows, the responsible organism *Str. agalactiae* is harmless to man. The bovine types are nearly all Type B., whereas the strains pathogenic to man are mostly Type A. These organisms do not readily establish themselves in the bovine udder, but implantation is facilitated if there are udder or teat lesions. Instances of infections of this nature are the Colchester outbreak of 1905 with about 600 cases, and the Hove-Brighton outbreak of 1929-30, of more than 1,000 cases and over 60 deaths.

Up to 30 years ago milk-spread outbreaks of scarlet fever were ascribed to direct infection of the milk from a case or carrier. While this is the mode of infection in some instances, in the majority these outbreaks are the result of udder infection similar to that responsible for the sore throat outbreaks. The evidence in support of this is along four lines. *Str. pyogenes* strains grow only with difficulty and slowly in ordinary milk. Epidemiologically, it is difficult to account for scarlet fever outbreaks of long duration unless there is some nidus which continues to infect the milk. Many of the outbreaks are mixtures of cases of clinical scarlet fever and others of sore throat only, and it is known that sore throat cases are spread in this way. In many of the more recent scarlet fever outbreaks, the association of the outbreak with a cow with an udder infected with a streptococcus of the same type has been proven. The 1936 Doncaster outbreak was a mixture of 135 sore throat cases with a rash (scarlet fever), and 229 similar cases without a rash. A Type 2 organism was recovered from an indurated test of a cow and from the patients. The 1939 Elgin outbreak of 214 cases, some with and some without a rash, was due to a Type 3 strain, recovered from the cow and from patients. The rarer outbreaks resulting from direct infection of the milk are usually explosive in character and limited in duration.

Typhoid fever characteristically is water-borne; nevertheless, milk can be the vehicle conveying the infection if contaminated water is used for washing utensils or for similar purposes. Most milk-spread outbreaks, however, are the result of direct infection of milk by a handler who is an acute case, or more commonly a chronic carrier. The largest of the milk-borne outbreaks was that of Bournemouth and Poole in 1936, in which 718 were attacked, about 70 dying. Improved methods of isolating *B. typhosus* and new methods of typing help to link up apparently unassociated cases and to show that milk-spread outbreaks are by no means always explosive in character or extensive. Milk is a common vehicle of paratyphoid fever, infection originating in a temporary or chronic carrier. An increasing proportion of dysenteric infection, too, seems to be the result of contaminated milk.

Although diphtheria bacilli do not multiply rapidly in raw milk, and although outbreaks spread through milk are infrequent, nevertheless, there have been occurrences of this nature, the milk being directly infected by a case or a carrier. In some cases the spread is indirect as the result of the implantation of the organisms on the cow's udder.

Milk may be the vehicle of two varieties of food poisoning, due to staphylococcal toxin and to salmonella organisms. Few staphylococcal strains produce the entero-toxin responsible for the symptoms of food poisoning, and milk is not a very common vehicle. A human carrier is the common source of infection though rarely staphylococci in the cow's udder may be the origin of contamination. Outbreaks of salmonella food poison-

ing, due to contamination of milk or milk products, are not uncommon. They are explosive in character, may be very extensive and have a low case mortality: in most the source of infection is a diseased cow suffering from a systemic infection, the organisms being present both in the faeces and in the milk. Cows may develop a carrier state, and can transmit infection to calves.

Infection may be transmitted by milk products. Cream can convey all the diseases which can be spread by milk. Tubercle bacilli and *B. paratyphosus* have frequently been discovered in raw cream, but typhoid fever is only rarely transmitted from it. Cream has been the vehicle in many outbreaks of staphylococcal food poisoning but not frequently of salmonella poisoning. Although organisms have been recovered from butter, no salmonella or enteric outbreaks have been reported in this country with this as the vehicle of infection, although abroad it has transmitted the organisms of paratyphoid fever. Cheese, on the other hand, has been responsible for many outbreaks; bovine tubercle bacilli can survive in it for many months. The possibility of infected cheese spreading undulant fever is slight, though outbreaks from infection by *Br. melitensis* have been reported in Italy. Cheese has been recognised for many years as being responsible for outbreaks of food poisoning, both of salmonella strains and the enterotoxin type. Although not considered to have been responsible for any outbreaks of typhoid fever or paratyphoid fever in this country, it has caused outbreaks in the U.S.A. and Canada, some quite extensive. In most "green" cheese, which has not had sufficient time for ripening, has been consumed. Canada and some of the States now require cheese to be made either from pasteurised milk or cream, or to be held in storage for many days.

The public health service is again indebted to Sir William Savage for an authoritative report of the present state of knowledge in this field, which we have summarised above in view of its great importance to our work.

#### Cross-Infection in Children's Wards

The problem of cross-infection has long been familiar to the many members of this Society who have been, or still are, responsible for its control in the wards of isolation hospitals in which, incidentally, a good deal of recent bacteriological research, notably upon dust-suppressive measures, has been carried out. After all, the wards of isolation hospitals are essentially children's medical wards with a clinical field ostensibly limited to the communicable diseases, but in point of fact of considerably wider dimensions owing to the high proportion of cases in which the notified diagnosis fails to withstand further investigation or observation. Cross-infection, specific or non-specific, overt or latent, is the bane of children in any hospital and is a problem which concerns both paediatricians and clinical epidemiologists. The literature of the subject is cosmopolitan, extensive and of comparatively ancient origin since it dates back, so far as general hospitals are concerned, to the last chapter of Murchison's classic on "The Continued Fevers," first published in the 'sixties of last century, and, as regards children's hospitals, to the pioneer observations and preventive methods of the French paediatricians, Grancher and his pupil Hutinel, who devised movable screens and boxes (or cubicles) in 1889 and 1894 respectively in order to mitigate, as far as might be, the appalling incidence of cross-infection in the child-wards of which they were in charge.

Since those very early days many important contributions have been made to the literature by individual British paediatricians and therefore the statement in the opening sentences of a report on the incidence of cross-infection in children's wards made upon its behalf by Watkins and Lewis-Fanning,\* that the British Paediatric Association's interest in the problem dates from 1945, must be taken to refer to paediatricians in their corporate capacity and not to individual members of the Association.

Watkins and his colleague enquired into the incidence of cross-infection; its effect upon morbidity and mortality and

\*Watkins, A. G., and Lewis-Fanning, E. *British med. J.* 1949. 2, 616.



upon the length of stay in hospital of those infected; and into the methods of prevention and their relative efficiency. For this purpose the authors selected 14 hospitals "as representing a cross-section of children's wards in clinical charge of experienced paediatricians." A well-devised and comprehensive "questionnaire form" was circulated and the records of 26 different wards over a period of eleven months were utilised for analysis. The survey embraced 9,619 cases, and of these 678 (7.1%) showed clinical evidence of cross-infection during their stay in hospital. Infections of the upper respiratory tract represented 37.8% and of the lower respiratory tract 8.4% of the total. Gastro-enteritis accounted for 20.8% and the acute specific fevers, headed by measles (11.8%) for 22.8%. By no means all the acute specific infections were "acquired" in hospital; numbers of children were inadvertently admitted during the incubation period, especially of measles—a happening very familiar to the medical staffs of fever hospitals. It will be noted that infections of the respiratory and gastro-intestinal tracts (other than specific) together totalled 67% of the 679 cross-infected children.

Whether all these were true cross-infections of exogenous origin seems dubious; it is highly probable that a proportion were of endogenous origin but this point is not discussed by the authors. However this may be, it is interesting to recall that Grancher and Hutinel recognised that the infections *banales* of the respiratory and gastro-intestinal tracts were much more dangerous than the acute specific fevers—diphtheria excepted. Special provision was made for the isolation of this disease which, at that time, the pre-antitoxin era, might have a case-fatality rate of 50%. Thanks to mass-immunisation, diphtheria is at the bottom of the list of the acute specific fevers in Watkins and Lewis-Fanning's table and represents only 0.1% of the total of cross-infected children. Cross-infection, especially in isolation hospitals which cannot transfer their patients, implies lengthened stay, and in the series under review averaged almost six days for the cross-infected. The authors make the somewhat obvious remark that any means that will reduce the length of stay will therefore increase the total annual occupancy of the beds—a conclusion that the medical administrators of isolation hospitals arrived at long ago and a policy they have not only preached but carried out with conspicuous success.

In terms of mortality, the results of cross-infection reported by the authors are disturbing, but it is to be borne in mind that many of these patients were infants and that most of them were probably gravely ill from some other condition. Of 587 cross-infected cases analysed, 50 died and, in the opinion of the paediatricians in charge, cross-infection contributed to death in 41; wholly in 13 and partly in 28 cases—an aggregate proportion of 7%. The authors endeavoured to establish a "standard cross-infection ratio" and the mathematical details of this ingenious formula will appeal to the statistically minded. Unfortunately, they have to conclude that the only "significant" result was the statistical verification of the fact, long known and accepted by others besides paediatricians, that the hospitalisation of infants is for them a perilous adventure to be avoided whenever possible.

Although this report covers such familiar ground, it serves to underline the potential risks to which children in hospital—any hospital—may be exposed. But, as the authors observe, if well-equipped hospitals, staffed by experts, have an average cross-infection rate of 7%, it may be suspected that other hospitals with fewer facilities and less expert staffs have an even higher rate. Some, however, outside the scope of their enquiry are, it appears, in the happy position of complete freedom from this affliction. It has never occurred. Watkins and Lewis-Fanning consider that an essential bar to cross-infection is a senior medical officer responsible for all admissions, a suggestion, by the way, made by Prof. R. Debré, of Paris, before the recent war and practised in the large fever hospitals for many years. Even so, as Watkins recognises, all may be undone in the wards by the neglect of precautions by the medical or nursing staff.

With the decline and fall of diphtheria and the extreme mildness of scarlet fever, which is preferably treated at home, many of the large fever hospitals in this country have shrunk

into departments and the greater part of their accommodation (the famine in nurses permitting) has been made available for general diseases. Nevertheless, until they are superannuated or otherwise disposed of, these departments remain in charge of experienced clinical epidemiologists in whom the techniques for the control of cross-infection, including bacteriological cross-infections, have become ingrained, with the result that the medical administrative decisions to be taken in any given situation are almost automatically forthcoming.

Until comparatively recently, the isolation in special hospitals of notifiable and certain "admissible" communicable diseases has been provided on a large, perhaps lavish, scale in this country. In the U.S.A. things are otherwise. Burgdorf\*, reporting upon the hospitalisation of communicable diseases and the isolation techniques and nursing procedures used, points out that only 18 States have special isolation hospitals and that 71% of these are in the populous States east of the Mississippi River. The actual numbers of these hospitals fluctuates from year to year—the median is 61. During the last four years, Burgdorf says, the demand for the hospitalisation of communicable diseases has increased and therefore, since isolation hospitals are scarce, the "general hospitals must offer some service for the contagious case whether in a separate wing, special ward or group of isolated rooms." A questionnaire addressed to 125 general hospitals with 200 beds and upwards elicited 60 replies (47.6%) and 59 of these lent themselves to analysis. Policy varied; 26 hospitals admitted all types of communicable disease; 27 certain types only; and six declined the admission of any. Most commonly the medical floor was used for the reception of these cases; least commonly the paediatric service; but some hospitals provided special wings, special rooms, special wards, or separate buildings for communicable diseases. (It is noteworthy that whereas only six of 27 hospitals admitted scarlet fever, 22 received cases of streptococcal sore throat—a reversal of English practice.) Burgdorf details the isolation procedures employed in the 59 hospitals, and concludes that some of them appear to be archaic. He recommends that a committee be set up representative of the laboratory, engineering and epidemiological sections of the American Public Health Association, the American Academy of Pediatrics, and the American Hospital Association "to consider simplifying the physical requirements for isolation hospitals so that they can welcome an integral part of the general hospital and to outline in simple terms the basic requirements for isolation techniques that will be in keeping with our present knowledge of infectious diseases.

Having regard to the changing circumstances, it may be that this Society might usefully initiate similar action in this country.

### Measles in London

The striking features of measles as it had occurred in this country were the consistency of the biennial beat of incidence in urban communities, and the very large proportion of the population who succumbed to this infection sometime during their lifetime. The changes which have occurred in recent years in London are discussed by Dr. G. E. Breen and Mr. B. Benjamin of the Public Health Department of the London County Council, in an article in the issue of the *Lancet* of October 1st, 1949.

As measles became generally notifiable in London only in 1938, the incidence before that date can only be estimated. There are four independent sources of information which can be used for this purpose: (1) The disease was notifiable in some boroughs; (2) information of the incidence amongst school children was received from the head teachers; (3) the admission to hospitals of patients suffering from measles; (4) case mortality.

From these sources estimates were made of the numbers of cases that might have been notified in those years before the disease was, in fact, notifiable, suggesting that the annual

\* Burgdorf, A. L. *Amer. J. Publ. Hlth.* 1949. **39**, 1289, (October.).

average was 5.3% of the 0-14 years population for the years 1931-38. (For 1945-48 the figure was only 4.1, being only 80% of expectation.) For 1931-38, between birth and the age of 15, then, 78% of children would have been notified as having had an attack of measles. This agrees with other estimates which suggest that of the pre-war population in London on the average 70% had measles before the age of ten years. On the other hand, the level of notification in 1945-48, if continued, would result in only 60% being notified before the age of 15. This reduction in post-war incidence is fairly evenly spread over all age groups. The risk, therefore, of an infant being attacked by measles in his passage through each year has fallen by 20%, and at any age the chance that he has been attacked has fallen by the same proportion.

The biennial swing in the incidence of measles in pre-war years was observed in most towns in the northern hemisphere. When the position of New York and London is compared, it is seen that in both in the main the series is one of alternate heavy and light years. Both towns "change step" at intervals, so that at times the epidemics were simultaneous, at other times not. Since 1940, New York has maintained the pre-war rhythmic pattern; the position in London is quite different, each year containing a greater or lesser outbreak of epidemic nature, but never attaining the proportions of a pre-war peak. Again, for England and Wales as a whole, there has been some alternation of heavy and light years. But these figures of incidence are the result of combining the notifications which produced peaks in some parts occurring simultaneously with low incidence in others, the only common factor in distribution being a low incidence in the autumn throughout the whole country.

Accepting a decline in incidence since 1938, the authors discuss changes in certain local conditions which might have accounted for it. They analyse three of these, density of population, social class, and state of nutrition, but find no statistically significant correlation between any of these factors and the incidence.

The authors touch on the various theories to account for the periodicity of measles. One of the earliest postulated was that when the proportion of susceptibles in a densely aggregated community reached a certain point the epidemic broke out, continuing until a large portion of the population was changed by an attack from the state of susceptibility to one of immunity. The births in the next 18 months augmented the numbers of those who, because they escaped attack, remained susceptible until the critical susceptible state of the community was again reached. Others have suggested that seasonal variation is a factor which, coupled with the accession of susceptibles, can precipitate an attack. As an explanation of the ending of the epidemic while there were still many susceptibles unattacked, it has been suggested that a process of latent immunisation by means of subclinical attacks was set in motion in the proportion of one case to four or five temporary immunes, this immune state lasting some 18 months.

These various theories, which could account for the pre-war occurrence, do not fit in with the changed post-war picture. If the ratio of susceptibles to immunes is so important as a precipitating cause, London must for many years have been ripe for a large-scale attack. To the theory of the development of a temporary immunity itself, there are many objections. It does not tally with hospital experience where, in ward outbreaks, a child might withstand three successive exposures to measles at fortnightly intervals, only to succumb to a fourth. Then why should the temporary immunity which is sufficient to withstand an infecting dose disappear so quickly as contrasted with the solid and durable immunity caused by an attack? Why does the latent immunity process not resume in the next outbreak where it left off, to lead to the development of a lasting immunity, and so lead to many more than do so, altogether escaping an attack of measles?

In contrast to these theories which postulate changes in the human host, there is the theory of parasitic variation, in which a periodic fluctuation in the infecting power of the organism is assumed to be the chief factor. In this the presumption is that at the beginning of any epidemic the power of the organism to multiply and to establish itself on fresh hosts increases

suddenly; exalted by rapid passage this power rises to a maximum; thereafter, as the result of increasing resistance and other factors, the impetus of the attack dies down and the epidemic subsides. The authors, admitting that variations in the virus can too readily be invoked to explain all circumstances, point out that strain variation is well known among the viruses already sufficiently studied. They submit, then, that it must be accepted that there is more than one strain of measles virus and that all strains need not exhibit a common level of infectivity.

### The Regression in Vaccination

It is known that the marked decline in vaccinations since the appointed day has been a feature of the National Health Service which has caused concern at the Ministry of Health and in local health departments. Dr. E. T. Conybeare, in the *Monthly Bulletin* of the Ministry of Health, and P.H.L.S. for October, 1949, discusses the figures of the first six months (July-December, 1948) compared with those under the Vaccination Acts, and the extent of the national decline which he reveals—by about one-half—may well surprise even medical officers of health who have been aware of the trend in their own localities. Another surprising feature is the very wide variation in county boroughs in the rates of infant vaccinations for those six months expressed as percentages of the births in the first half of 1948—ranging from 45% in Bootle to 1.4% in Leicester (where perhaps the Millard influence still prevails!).

Dr. Conybeare thinks that the decline may be a temporary phenomenon but that if the full year's figures do not show an improvement, an increase in the vaccination clinics of local health authorities will be urgently required. He does not go into the reasons why the general practitioners of the country have not played the part that was expected of them—one is, of course, the delay in settling the question of payment for this work—but it is clear that the family doctor has not achieved what the former vaccination officers did in this field. It may not be realised by some of the present generation that it was the Society of Medical Officers of Health which, through the Association of Municipal Corporations, advised before the recent war that compulsion should be dropped and a system of voluntary persuasion, like that for diphtheria immunisation, be adopted. But the Society in those days did not realise that the actual execution of the vaccination scheme would be largely taken out of the hands of local authorities.

### Diphtheria Immunisation in Scotland

Dr. I. A. G. MacQueen contributes another of his interesting statistical studies in the evaluation of public health measures to the *Health Bulletin* issued by the Chief Medical Officer of the Department of Health for Scotland for October, 1949. In an analysis of the diphtheria position, Dr. MacQueen takes the recent immunisation figures from the Scottish counties and burghs which show a significant decrease in the number of pre-school and school children inoculated during the second half of 1948, and a still more dramatic fall to just over half the number in the previous six months in re-enforcing doses. He can find no explanatory features such as any discrediting of immunisation, nor any drop in the central and local propaganda. Likewise, pressure of work and delay in settling fees might have accounted for the general practitioners not doing the same amount of immunisation among pre-school children, but the decline amongst school children cannot be ascribed to such circumstances, as local authority staffs have been almost entirely responsible. He therefore turns his attention to the position of medical staffing amongst the local authorities and shows a significant relation between a shortage of medical and nursing staff in local authorities and the rates of diphtheria immunisation. This study will be of particular interest to those who believe that the main success of preventive inoculation and vaccination depends on the time and effort put into it by whole-time staffs of local authorities.

## Opening Papers Presented to the Joint Meeting of the British Paediatric Association and Society of Medical Officers of Health, November 25th, 1949

### A HEALTH SERVICE FOR CHILDREN \*

By HELEN M. M. MACKAY, M.D., F.R.C.P.

#### Existing Health Services for Children: Some Deficiencies

The biggest factor in a child's well-being is the care he receives in his own home. If the vast majority of homes the mother's care is good, and her ability to care for her children in sickness is constantly underestimated. The steadily mounting cost of treatment in hospitals is but one additional argument for home care whenever possible. Every child now has his general practitioner responsible for helping and advising his parents, but many general practitioners have had the minimum of training in paediatrics and a teaching hospital of over 750 beds may have only 18 beds for children—a fantastically small proportion since nearly one-quarter of our population consists of children. If the training of doctors in the care of children were anything like as thorough as their training in the care of adults we should have gone a long way towards providing the paediatric services we need. Many provincial undergraduate centres are far ahead of London in this respect.

Since a knowledge of disease is essential to sound advice in school clinics and welfare centres, and help given during her child's illness is a passport to a mother's confidence, the present division between doctors in the so-called preventive services and their colleagues should be ended as soon as possible. In some areas the position appears to have deteriorated since July 5th, 1948, as a result of the effort of some local authorities to shift expenditure on to the exchequer. Before that date, doctors in most borough clinics could, in practice, treat minor ailments, whereas now in certain local authority areas the doctor is apparently expected, in effect, to tell the mother of a baby with some minor ailment: "I am not allowed to give you any prescription or treatment; you must take the baby to an already overcrowded surgery or out-patient department."

The school medical service and its efficiency appear to differ widely in different areas. In some the work is varied and includes clinical responsibility—in others, initiative is not encouraged, and anonymous pink cards take the place of letters to the hospital doctor.

At present only a minority of hospitals dealing with children have any medical staff trained in paediatrics. What is possibly even more serious, still fewer hospitals have children's trained nurses in charge of children's wards. Moreover, children, particularly those over five years of age, are often placed in adult wards. Contrast the skilled handling of an apprehensive or crying child by a sister trained to deal with children, who understands them and their needs and is sympathetic, with the handling by a sister—albeit with wide experience of adult nursing—who knows nothing of paediatrics, is worried and tired by the crying and has no idea how to stop it. In many hospitals, children who could be nursed at home fill beds, overcrowd the wards, and overwork the nurses and so help to spread infection and prolong the average stay in hospitals. I can see no remedy except control of admissions by doctors with paediatric experience. When the treatment needed can be given by the mother, she would nearly always, and quite rightly, prefer to keep her child at home.

#### Regional Planning of a New Health Service for Children

##### First Essentials

The first essential for a good service is a well trained staff of doctors, nurses and technicians; the next, facilities for these to weld themselves into suitable groups and teams provided with all necessary material and technical adjuncts.

The separate administrative machinery now dealing with

the different sections of the children's service is likely to make the interlocking of local health authority services with the rest a matter of much difficulty. If all medical appointments to clinics and schools were in the hands of regional boards (or their committees) the full co-operation of hospital, domiciliary and clinic services would be facilitated.

#### The Use of Trained Staff in Hospitals

Sufficient trained staff for children does not now exist, and the first problem in regional planning, therefore, is how best to use what we have and how to train more. A few relatively large hospital units are far more economical of staff—and of money—than numerous small ones. Good training can only be given in good units and student nurses working in badly staffed units are likely to learn bad ways. It is therefore imperative to use the existing staff to the best advantage by building up a relatively small number of really adequate hospital units as quickly as the financial situation permits. There is a very real risk that the present opportunity may be allowed to slip for want of keeping our aim clearly in view. Each region, therefore, needs an over-all plan showing where good paediatric units already exist and could be enlarged, or where new ones could be built up as trained staff becomes available. Meanwhile, small and inefficient hospital units should gradually disappear. To make appointments without an over-all plan is sheer folly.

#### Advisory Committees

Some regional hospital boards, on the initiative of their administrative medical officers—to whom we are much indebted—now possess advisory committees of representative paediatricians to assist them in matters affecting the paediatric hospital service. To the best of my knowledge, local health authorities have as yet made no similar move. In the North-East Metropolitan Region, the members of the advisory committee of paediatricians are also members of a larger and less official child health committee of the region, which includes medical representatives of the local health authorities, with the deputy administrative medical officer of the regional board and a representative of the Ministry acting as observers. This larger committee, with its sub-committees, provides an admirable forum for the discussion of problems of the child health service before official action is taken. But an official advisory committee for all the children's health services in the region is still lacking.

#### Type of Service Wanted

##### Domiciliary and Preventive Services

Let us consider in broad outline the type of service we should like to have. In this connection, may I ask you to read the Report of the Paediatric Committee of the Royal College of Physicians, which sets out many of our objectives.

Each child will have his own general practitioner. As a long-term policy in cities or large towns, this doctor will, I hope, be a member of a firm or team of perhaps eight doctors working at a health centre, of whom, say, two will be specially interested and trained in paediatrics. In rural areas where general practitioners as well as patients are more thinly spread, the same division of work among doctors will not prove possible—but this makes it all the more important that rural practitioners should have had adequate paediatric training. A large part of the clinical work in schools and child welfare clinics will be done, we hope, by general practitioners interested in paediatrics, their numbers augmented by those who, under the present régime, take service as child welfare and school medical officers and who, we hope, in future will undertake domiciliary clinical work as paediatrically minded general practitioners.

Paediatricians, whose main work is in hospitals, will have some share in the preventive services. Child health officers, whose training and duties would be roughly those described

\* Condensed by kind permission of the Chadwick Trustees from a lecture delivered at the Westminster Medical School, London, on March 22nd, 1949.

by the Maternity and Child Welfare Group of the Society of Medical Officers of Health, will, I hope, be appointed in some areas. Such a doctor will have gained his M.R.C.P. and have had several years' post-graduate training in paediatrics in hospitals, in schools and in clinics. He will give, perhaps, three-quarters of his time to preventive paediatrics in schools and clinics, and one-quarter to work in a hospital where he will have charge of beds. This doctor, who should not be overburdened with administrative work, should play a large part in linking the facilities of hospital and local authority services in his own area.

In welfare centres and school clinics, which should be centres of teaching and help for parents, minor ailments should be treated and simple medicaments provided. A school doctor should feel individual responsibility for the health of his own school, so far as he is able to ensure this, and should advise on all that concerns the children's well-being. The type of school medical examination and record keeping needs periodic overhaul, and improved methods should be encouraged. Various tests might well be introduced, such as tuberculin diagnostic tests, mass radiography examinations, haemoglobin estimations and possibly various performance tests. The experience gained in army training and rehabilitation centres might prove helpful. Co-operation between school doctors and hospitals should open up possibilities of very useful investigation.

#### Hospital Services

What kind of hospital service do we want to have? I propose to consider this mainly under two heads: (a) paediatric units of general hospitals; and (b) regional paediatric centres.

##### (a) Paediatric Units of General Hospitals

The basic hospital needs for children in most areas will be met by the paediatric units of general hospitals, which I will now describe. In most hospital management committee areas, there should ultimately be either a paediatric unit of 50 or more medical beds, together with surgical and E.N.T. beds (perhaps another 35) usually all in one hospital, or else a branch paediatric out-patient department based on such a unit.

The paediatric unit should have under its wing, or be intimately associated with, all the neighbouring paediatric beds or paediatric hospital facilities, whether these be medical, surgical, E.N.T., neonatal, "fever" beds, out-patient clinics, or child guidance clinics. All in-patient children under puberty should be dealt with in the children's department, whether they are under a paediatrician or a surgeon, and the sister in charge of every children's ward should be a sick children's trained nurse. The medical, including neonatal, beds will be under the direction of one or sometimes two paediatricians, one of whom might perhaps be the child health officer already considered. The paediatrician should be assisted by a registrar, who, like his chief, may also work in a regional centre, and probably two house physicians. Since the unit cannot function in isolation, it must be provided with the services of all necessary specialists and special departments. Most of these children's units will, therefore, form part of busy general hospitals. The paediatrician of such a unit will also work, if possible on two or more half days, at a regional centre (to be described later), and will take his share in the preventive work of the area. If he is interested in research, he should have time for this, as well as for medical reading. He should take part in the management of his hospital as well as in the paediatric affairs of the region.

In the interests of efficiency and reasonable economy of staff, equipment and money, paediatric units should not be too small, and it is unlikely there will ever be sufficient need for children's beds to justify, in addition to the various regional units (each of 100 or more beds), the establishment of a paediatric unit in every management committee area. Hence a regional unit, or the paediatric unit of one management committee area may be responsible for one or more branch out-patient departments in hospitals in other groups under other management committees, and patients from those

branches will be admitted to the beds of the parent unit so as to render the paediatric facilities of the two areas available to all children.

It is futile to attempt to assess for any long-term plan the number of beds required for children in terms of existing population, since the number needed depends on many unknown and changing factors, such as morbidity rates, facilities for home nursing, home doctoring and out-patient investigation and average length of stay in hospital. A series of units which can be properly staffed should be planned and built up. When these are established, it will become clearer when and where an inadequately staffed group of children's beds can be closed, or where new units are really needed.

##### (b) Regional Hospital Centres for Teaching and Research

In every region there should be paediatric regional centres, possessing the outlook and facilities of university centres, for treatment, teaching and research. They will deal mainly with children suffering from the common diseases of childhood, but they should be equipped for highly specialised forms of investigation or treatment which cannot be available in every paediatric unit. These main regional centres should be:

- (1) The paediatric department and the neonatal department of the undergraduate teaching hospital or hospitals.
- (2) A post-graduate teaching centre (which may be a separate children's hospital or may be the same children's hospital as undertakes undergraduate teaching), together with an associated neonatal unit.
- (3) A long-term hospital having an acute section and an out-patient department for its own area. Such a hospital exists nowhere as a regional centre for teaching and research and is greatly needed.

These regional centres should be widely linked through their staff with the paediatric units of the various general hospital groups, and should, by bringing together paediatricians working in widely scattered areas, do much to produce and maintain a high level of work throughout the region. It is particularly desirable that child health officers should work in regional centres; this would open up fine possibilities of joint research inside and outside the hospitals.

##### Patients with Infectious Diseases

Infectious diseases hospitals and general children's hospitals should be fused into all-purposes paediatric hospitals or units such as have for long existed in many continental countries and in the United States. Every paediatric unit admits many patients suffering from the same types of infection as does a fever hospital, e.g., streptococcal infections, meningococcal infections, gastro-enteritis, poliomyelitis, etc., so that the present division between fever hospitals and others is artificial and serves no good purpose. We need, therefore, all-purposes children's hospitals with sections for the isolation of infectious diseases and follow-up departments.

##### New-born Infants

Every neonatal department should be linked with, and form part of, a general paediatric unit and should share all its facilities for neonates, like every other age group, may on occasion require the services of various specialists, from a radiologist to a neuro-surgeon. The paediatric unit should be able to admit, if desirable with their mothers, premature infants and other infants born at home, and these infant wards will require liberal staffing with nurses specially trained for this very exacting but very rewarding work. When admitted, the "clean" neonates, so-called, i.e., those having no infection, can generally best be housed in the maternity section with their mothers; possible cases of infection should be placed in cubicles of the general paediatric unit.

##### Patients Needing Long-term In-patient Treatment

Long-term hospital patients should be treated in general children's hospitals, staffed and equipped to deal with all types of such cases admitted from different parts of the region, and should provide for research. Every long-term hospital should have an acute section and an out-patient department



to serve its own area. Sections of the hospital may be devoted to special types of disease, such as ophthalmological cases, rheumatic cases, tuberculous cases, etc., but it is, I believe, impossible satisfactorily to staff hospitals dealing only with one group of diseases, and in order to preserve professional keenness and efficiency, the stimulus and interest of acute work is essential. But equally important, the happiness and psychological well-being of the children need constant consideration, for a long-term hospital can be a grim place for a child without mother or friends and confined to bed for months on end. Diversity of accommodation should be provided. Some children will need treatment in ordinary orthodox wards. Others should live in cottage homes, ten or 12 in a cottage, and attend a school in the grounds and perhaps receive treatment in a special treatment centre, as advocated by Prof. Spence. Each cottage home would be in the care of a house mother, whose special function it should be to give the children something approximating to home life. In addition, visits from parents should be encouraged and facilities given to make these visits happy, by making provision for such things as a ride in a wheeled chair, a picnic in the grounds, a new game, or a story read aloud by the mother.

#### *Psychiatric Services*

I have left the psychiatric services so far unmentioned. Child psychiatric clinics should be in close geographical proximity to, and preferably within, the children's hospital unit. The advantage of a close association of the psychiatric and general paediatric department is that many children with psychiatric symptoms need full physical investigation. Psychiatrists should not be a race apart but members of the hospital team, seeking and giving help as required. Child psychiatrists should have had practical training in general paediatrics, but the number with such training is at present minimal. There is urgent need for in-patient accommodation where child patients can receive psychiatric treatment, combined with all necessary physical investigation and treatment.

#### *Transfer of Patients*

It should be easy to transfer a child, with the parent's consent, from one unit to another whenever this is indicated in the interests of the child. This is a point to which we attach great importance for it would bring the facilities of special departments within the reach of children, wherever they might be. If the paediatrician is himself attached both to a peripheral unit and a regional centre, the transfer to the best place for proper investigation and treatment is obviously easier.

#### *Convalescent Homes*

Convalescent homes of different types, sizes and staffing are needed, and hospital almoners should be given time and opportunity to get to know them and their matrons, so that they can help in selecting the one best suited to the needs of the individual child. The usual length of stay should be five or six weeks, but many children need considerably longer periods if any permanent benefit is to be achieved. Periods of a month or less, as decreed by some local health authorities, are often of very transient value and are therefore wasteful.

#### *Initial Steps Towards a Better Service*

There is no short road to a good health service for children but the first essential is to make an over-all plan, at least in outline, so as to avoid waste and frustration. The initiative should come from the paediatric advisory committees of the regional boards, and we hope from regional child health committees who could advise the local health authorities, but they need backing and encouragement by the executive bodies. The best plan cannot function without well-trained staff, and since such staff does not at present exist in sufficient numbers, provision for training is a primary obligation.

#### *Facilities for Undergraduates and Post-graduate Teaching*

Adequate undergraduate training units must be set up, and it is recognised that this may necessitate providing much larger departments than now exist. Facilities for training in the care

of the new-born and in child welfare work also need overhaul.

Post-graduate training necessitates the existence of a properly staffed and equipped regional post-graduate children's hospital, and of children's units, such as I have described, in general hospitals, where the doctor will work as one of a team, whether he be houseman, registrar, or paediatrician, or general practitioner clinical assistant. Courses of instruction will also be given at the regional centres.

#### *Importance of the Regional Plan*

An outline hospital scheme for each region should indicate not only where each unit should be established, or built up, but also what existing neonatal, fever, or other beds should form part of it, so that, as trained staff become available or existing staff retire, first one post and then another in the existing framework of the regional plan can be filled to the greatest advantage. Joint appointments, when possible, are very desirable because thereby an outlying paediatric unit and, perhaps, a children's hospital, can be linked together to the advantage of both. The keen desire shown by management committees and medical advisory committees to make their own hospital as perfect as possible is admirable, but if each general hospital group seeks to create its own children's unit and insists on trying to attract trained staff from the small number available regardless of the larger good, the whole future of the paediatric service may be in jeopardy. The child health committee, previously described, might well take the initiative in the difficult task of creating a plan for combining the preventive and hospital services.

#### *Existing Medical Personnel and the Transition Stage*

##### *Child Welfare and School Medical Officers and General Practitioners*

Wherever there are local general practitioners who take an interest in paediatrics they should be brought into the preventive services and their abilities used to the full; and as the new paediatric units become established they should be offered clinical assistantships so far as hospital facilities allow. What of existing members of these services? Many child welfare officers are old and trusted friends of a large circle of mothers and young children. Some of the younger members will wish, if opportunity offers, to equip themselves to undertake clinical responsibility for sick children as general practitioners in firms at health centres, when these exist. Everything possible should be done to facilitate this by, for example, granting them time each week to attend a local paediatric unit. It is unlikely that the number of paediatric units will be such as to permit of any but a small proportion of those now in the preventive services obtaining permanent responsible posts in hospitals. A few may have, or obtain, the training and qualification which will enable them to become the child health officers already described. Others, including the middle aged, may not feel able to take on new responsibilities and will wish to continue with their clinic work as before. They might, however, by attending the clinical meetings of a paediatric club, gain stimulus, as we all do, from our fellows and greatly increase their interest in their day's work. The changeover from full-time school or welfare medical officers to the new combined service must and should be gradual and local readjustments of duties should be made as desired by individual doctors so far as this is possible. New appointments should look to the future. Most of those doing preventive work should look to domiciliary work rather than hospital work, for their service to sick children.

#### *Paediatricians*

What of paediatricians now holding part-time contracts in the new health service? At present their duties are often widely scattered, necessitating much travelling, and they should be given the option of transferring and concentrating their appointments if they so wish. But since good will, and the spirit of a hospital, count for infinitely more than a tidy pattern, if a man has his roots in a hospital heaven forbid they should be cut. The hospitals depend on the roots of those who serve them. Once these initial staffing adjustments have

been made, open advertisement of posts should follow, and the young men and women now in training as paediatric registrars should be encouraged as soon as able, to take up joint appointments, which we hope will give them opportunity both for launching out on their own and also for maintaining contact with their fellows. Full-time employment in a unit in which he has no contact with fellow paediatricians is undesirable.

#### Paediatric Clubs

A paediatric club associated with each paediatric unit would be an excellent innovation. Doctors interested in child health, whether working in or outside the hospital, would get to know one another and co-operation in the meetings would foster team work. Clinical meetings might be held at the paediatric unit or its branches as well as in other centres such as a school for the physically defective, a welfare centre, or a school where some special investigation was in progress. Thus, club members would themselves see the facilities available to their patients within a reasonable radius. The steady progress of well-staffed children's units throughout the region, and the encouragement of research, should arouse a new and live interest in paediatrics, and I do not think it is Utopian to expect that paediatric clubs would do much to foster and spread this spirit.

#### A Nursing Service for Children

##### *The Vital Importance of Training and Vocation*

Good nursing is the basis on which most of our work, as doctors, must always depend. Children's nursing to be good must be done by nurses who are fond of children, who want to look after them, and who are trained for this work. This is absolutely fundamental. We must, therefore, ensure that the children's trained nurse is given full opportunities for advancement in her career. If the working party's scheme, or some modification thereof, is introduced, there must be full opportunity for the basic training in nursing to be taken with children otherwise grievous harm will be done to our service for sick children, already handicapped by the disabilities imposed on sick children's nurses as compared with the nurse with a general training.

##### *Domiciliary and Preventive Nursing*

It is important that nurses should not become stale and lose interest by working in too narrow a groove. Hence the school nurse and the health visitor should be given the opportunity to keep up their knowledge of sick nursing. In cities, district nurses, health visitors and school nurses should be members of a team, some of whom would specialise in work with children, others in the care of the old, or in tuberculosis work, etc. All nurses with special qualifications for the care of children would be allocated to this branch of the health service, but might be called on to help all sections of the community in time of emergency. The sick children's nurse is certainly as well equipped to nurse an adult as is the general trained nurse to nurse an infant. In time all nurses allocated to children should have had a full training in sick children's nursing which should be recognised as giving equal status with general nursing. So far as possible the children's district nurse cum health visitor would have an area allotted to her in which she did both domiciliary nursing, domiciliary preventive teaching and attendance at certain children's clinics. She should work in co-operation with general practitioners. In towns, two or three children's nurses might together cover one area. To enable the nurse to cope efficiently with a larger volume of work she should have a small car to transport herself and her equipment in reasonable comfort between her many ports of call. The interchange of nurses working in hospitals and those doing domiciliary work should, in spite of its obvious difficulties, be encouraged so far as possible. Here is a big field calling on the ingenuity of administrative medical and nursing officers and challenging their skill.

A full nursing training is quite unnecessary for much domiciliary and clinic work, and orderlies might well be attached

to each nursing team. As the nurse's working mate, such an orderly could carry out many routine domiciliary visits and clinic duties under her direction. A definite status and uniform would be desirable, but the uniform should be quite distinct from that of the nurse. Part-time workers could certainly be utilised.

In a rural district it is clear that nurses in the future, as in the past, will have to undertake all the work of the area for all ages and all sorts of conditions—and right well they have done it.

#### Hospital Nursing

A nurse's training is long and exacting, and everywhere the need for saving her time and energy is recognised, but progress towards this end is lamentably slow. We continue to tolerate wards with no basins, with all the waste of time this involves. Every telephone call to the ward requires an answer, so that a nurse may have twice or thrice in the course of feeding one sick baby to answer the telephone, and each call may necessitate her putting the baby back in bed, taking off her overall, answering the 'phone, returning, washing, donning her gown and getting the baby out of bed again. Yet how many hospitals have an efficient system of signals for summoning the house doctors without the use of the telephone? In babies' wards especially, but in all children's wards, there is a lot of clerical work, such as charting, writing to parents, etc., yet very few hospitals provide clerical help for the sister. An auroscope and speculae of varying size are in constant demand in every children's ward and a nurse's time should not be wasted searching for them from one ward to another because too few are provided. A central syringe service would save very many nurse-hours. The laundry is apt to destroy babies' woolies, and these are often washed daily by the nurses, yet washing woolies scarcely demands a nurse's training. The remedy does not lie with the nurses but with those who hold the purse strings, and here, if anywhere, labour-saving devices are urgent necessities.

#### Experimental Innovations

Such, then, are some of the needs of a child health service as I see it. There is much that I have not touched on, including many experimental innovations. I will mention only a few: We should experiment with daily visiting in children's wards. We should try to bring mothers, both in their own and in the children's interest, into the hospitals to help with nursing their own children. A canteen and lounge would enable many to give a number of hours' daily service. We need "play ladies," preferably voluntary, who will come to the wards at fixed times each day to provide the children with play and occupation. We should experiment with different types and methods of post-graduate teaching. We should have in each region a central bureau, perhaps at a health centre, where current local statistics of child health are available, such as notifications of infectious diseases, mortality rates, bed bureau returns, and so on.

These are but a few of the things we should try. Many more will occur to you all.

#### Conclusion

What does the future hold? Those of us who work in the field of paediatrics find our work of absorbing interest, and a service is made or marred by those who work in it and for it. Heretofore, the paediatric service has suffered because of its financial and other handicaps. Hence we lack the trained staff we need. If the National Health Service offers the same prospects to the man or woman working for children as to those of comparable attainment in other branches of medicine, our work, which is in itself so immensely rewarding, will gain all the recruits it needs. If paediatricians and administrators plan wisely and executive bodies co-operate, and the country begins to pay its way, we can quickly and steadily improve the children's health service, but we still have a long way to go before we can overcome the handicaps of the many lean years which have not yet passed.



## THE ORGANISATION OF CHILD HEALTH SERVICES FROM THE POINT OF VIEW OF A MATERNITY AND CHILD WELFARE OFFICER

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When considering the organisation of Child Health Services we must first decide how far we consider it desirable that there should be integration between the child health services of the local authority and curative paediatrics. Having decided that, we must then consider how such a programme could be carried out. It is easy enough to set a target or propound an ideal arrangement. It is quite another thing to make practical arrangements whereby these new ideas can be brought into being. I would remind you of the following extract from the Ministry of Health Circular 118, dated July 10th, 1947:

"To-day a medical officer for maternity and child welfare commonly conducts both ante-natal and child welfare clinics. A greater degree of specialisation—in either maternity or child welfare—should be encouraged. For this purpose practical and continuing experience in the clinical field will be recognised as essential. It is suggested therefore that arrangements should be made whereby those of the local authority's medical officers who by experience and choice are best fitted to work in ante-natal and post-natal clinics should gradually be assigned to that work, attached to the obstetrical team and thus spend part of their time in midwifery work and in acquiring the necessary experience to enable them to enter full obstetrical practice either as specialist obstetricians or as general practitioner obstetricians. Similarly, those of the local authority's medical officers who are more interested and experienced in child welfare work should gradually be allocated to the authority's child welfare centres and spend part of their time participating in the work of an appropriate paediatric department or children's hospital."

A recent editorial in the *British Medical Journal* chided local health authorities for being so dilatory in bringing these new arrangements into operation. The maternity side of the matter is not the concern of this meeting. I will only remark in passing that desirable as are the recommendations in an earlier paragraph of the same circular for consultations between local health authorities and regional hospital boards and hospital management committees whereby they may discuss together how these proposals may be implemented, yet while many local health authorities may be ready, the boards and committees do not appear so far to have put their own domestic affairs, especially with regard to medical staffing, in sufficient order to be in the position to enter into any such discussions. As regards domiciliary midwifery, by no means all women desire to avail themselves of the new arrangements whereby they can engage a general practitioner for ante-natal and post-natal care. In Birmingham one-third of the domiciliary cases have so far wished to avail themselves of these new facilities. Whether this proportion will increase or diminish will depend on the standard of care provided by the general practitioner obstetricians. Until it is clearer than it is at the present time what the ultimate trend will be it is the duty of local authorities to continue to provide medical officers to staff local authority ante-natal clinics. For various reasons depending on the area, it is not always possible to occupy a medical officer wholly in this work, and therefore advertisements for joint appointments are likely to continue to appear at least for some time.

To return to paediatrics, Circular 118 goes on to say that "reciprocal arrangements of this kind can, it is thought, be made to work effectively only if the selected medical officers are appointed on a specified part-time basis in each case to the staff of both the authority and the board." How are these recommendations to be carried out? What is to be the standing and responsibility for patients of these officers? Are they to treat patients and, if so, where? Are they to rank as registrars or clinical assistants or what?

It might be useful to restate what is the primary purpose of a local authority child welfare clinic. Its purpose is to give advice on the maintenance of health and the prevention of

disease. It also provides an opportunity for the detection of disease in its early stages. Unpopular as the doctrine may be at the present time, I still maintain that there are those medical practitioners whose main interest is curative medicine and those whose main interest is preventive. In any plans we make for the future I think we must be careful that we do not lose sight of the primary purpose of local authority child welfare clinics. At the same time it is agreed that local authority child welfare medical officers would benefit by more contact than many of them have at the present time with curative paediatrics.

The suggestion in Circular 118 is that these officers should participate in the work of an appropriate paediatric department or children's hospital. How is this to be accomplished? One may have an arrangement whereby the medical officer attends either at an out-patient department of a paediatric unit or at a ward round, or both. This is a useful measure as a short-term policy but whether it meets the case from the long-term point of view is a matter for discussion. It is doubtful whether it is a good idea for such a medical officer to undertake the treatment of out-patients if that implies that he only deals with return cases. It is unlikely that consultants would be willing that medical officers should take their place in seeing new patients sent to them for consultation.

The other alternative is that child welfare medical officers should be responsible for treatment of patients in the wards. This raises many difficulties. It is unlikely that the medical officer can attend sufficiently frequently to become solely responsible for such patients. On the other hand, two medical officers might be responsible for a given number of hospital beds and each might attend at the hospital concerned for three half days a week, alternating with each other and taking alternate duty at the week-end. In this way a group of beds would be covered medically during the whole period. The medical responsibility for these patients, however, would be divided and such an arrangement might well prove unworkable. Care must also be exercised to see that medical students, house physicians and registrars are not crowded out.

It is interesting to speculate how an arrangement like this would operate in a region such as my own. We have in the Birmingham Region 13 local health authorities who employ between 150 and 160 whole-time medical officers engaged on maternity and child welfare and the school medical service. There are available throughout the region, including the Teaching Group, approximately 1,950 medical and surgical children's beds, some of them in very small units. Estimates of the optimum requirements for children's beds vary but it might be said that in a region covering five counties and containing a population of 4,000,000, as the Birmingham Region does, something over 2,000 beds would be required, exclusive of beds in infectious diseases hospitals.

In urban areas it might be possible, other things being equal, to arrange their local authority duties so that child welfare officers might undertake the treatment of patients in hospital but in rural areas such as we have in the Birmingham Region great difficulty might be experienced, owing to the distance to be covered, in reconciling the demands on the medical officers' time, of the hospital duties on the one hand and the local health authority responsibilities on the other. Even if the difficulties of distance were to be overcome, it is practicable or desirable, with the number of beds at our disposal, to have so many people competing for the privilege of treating patients in hospital in addition to the consultant paediatricians, registrars, etc.?

Only in the larger centres would it be possible, as Dr. Mackay suggests, for one or two child health officers to be responsible for the treatment of patients in hospital. For the vast majority such arrangements would be impracticable. I do not agree with Dr. Mackay that these child health officers with responsibility for hospital patients can play any major part in linking the facilities of hospital and local authority services. The amount of administration required to achieve such a linkage is greater than is generally realised. In any event any administrative arrangement affecting the child, to be effective, must also take into account the mother from the pre-natal period onwards. The view expressed in the report on the Paediatric Services of the Royal College of Physicians that there will still be need for administrative maternity and child

welfare officers is in my opinion sound. Whatever division will ultimately emerge between maternity and child welfare, administratively speaking the mother and child must be considered as one unit.

In the present economic state of the country it is unlikely that we shall be able to increase our hospital bed accommodation for children for some time. Indeed, existing small units may have to be closed for lack of nursing staff. In one way our economic difficulties in this direction may not altogether be a disadvantage. They may help to make us realise that a great deal more might be done for a child in its own home were all the services at present available to work together harmoniously. Is there any reason why local authority medical officers who have post-graduate experience in a children's hospital and who are experts in the problems of feeding and general hygiene should not be consulted by their colleagues the general practitioners? Much is said about the encroachment on general practice but a recent comment made elsewhere is quite pertinent, namely, that there is great pressure put upon medical officers of health to bring general practitioners into the local preventive services but that there is reluctance to allow any movement in the opposite direction, that is to say of giving public health medical officers any opportunities in other fields.

Although we hear a great deal about the family doctor, who will be responsible for the well-being of the whole family, yet when the organisation of a health centre is being discussed it is suggested, and quite rightly in my view, that one or two of the group-doctors would be more interested and trained in child care than the others. Is there any reason why at least one of these doctors in a group should not be a local authority medical officer? I see no reason why such a medical officer should not visit and, if need be, treat children in their own homes. Some general practitioners like to conduct their own baby clinics. These practitioners might well in group practice occupy a somewhat similar place to that already suggested for the local authority medical officers. Such practitioners are often handicapped in their present arrangements in that their surgeries are rarely adapted for the purpose of baby clinics and, except in rare instances, they are without the services of a health visitor. Although health visitors occasionally assist doctors in their surgeries in this way, the shortage at the present time is such that the practice could not become widespread.

Mothers who do not attend ante-natal clinics or child welfare clinics miss much valuable instruction in healthy living, which they would ordinarily receive from the staff there. Is it not possible that doctors could be organised in groups in advance of the building of health centres and that these groups should be based on existing maternity and child welfare centres for the purpose of developing a paediatric service in each area? Out of such groups might well evolve the type of organisation to which I have referred. The first thing which must be done is to develop mutual confidence and after long years of mistrust and suspicion that is not easy. It requires time and patience. There is also the financial problem. How are the local authority medical officers working in association with a group of general practitioners to be remunerated? If on a salaried basis, will there require to be any financial adjustment as between the local health authority and the local executive council because they would be undertaking treatment under Part IV of the National Health Service Act? That they should act as partners or assistants in the group seems to me impracticable for various reasons. Their responsibility towards patients who may be on the list of another practitioner would also have to be defined, yet in spite of all these difficulties this seems to me the logical way of development in that there will gradually evolve a class of practitioners called general practitioner paediatricians, who may be general practitioners or whole-time local authority medical officers based on a health centre, who would work in association with a group of general practitioners. At the same time it would be of value to retain the arrangement already in operation in several areas whereby they could attend at regular intervals the practice of a nearby paediatric unit.

The suggestion that the health visitor should also undertake sick nursing is a highly debatable one. In rural areas with their widely scattered populations there is no alternative. My own experience of work in a rural area, however, gave me the

impression that the curative duties always took precedence and that too often the preventive aspects of the work received scant attention. In urban areas I am certain that this arrangement would not be in the best interests of the mothers and children.

Medical students must also receive more adequate training in paediatrics than they have until very recently. There are two ways in which this can be done as far as the preventive service is concerned. The medical students might be required to attend a number of clinics at child welfare centres, at which they would learn the routine of feeding and management or they might be given a bird's eye view of activities of the child welfare department so that when they qualify they can use the services provided intelligently. An ideal system would be to have a combination of the two but, with the present pressure on medical students' time, this is not always possible.

It has been suggested that this preventive technique may be learned more easily by attendance at a clinic run in the surgery of a general practitioner. It is suggested that local authority clinics are run by means of a routine intended to cope with a considerable number of children in a set period of time—organised efficiency rather than one of intimacy of understanding. In a well-run child welfare clinic a medical officer sees no more children than the general practitioner at a special session in his surgery and the atmosphere is likely to be at least as calm, unhurried and sympathetic. Mothers get more than physical care at these clinics or they would not come so often. The number of students present at one session is also a matter which requires consideration. Personally, I think one student, or at the most two, at each session is sufficient. It may well prove impracticable in the present crowded state of the medical students' curriculum to ask them to travel the additional distances to enable them to be present at suitable general practitioner consultations. Registrars on the staff of paediatric units should be required to act as medical officers at child welfare clinics as part of their training.

Finally, there must be planning at regional level. Dr. Mackay makes the important point that a start should be made from good paediatric units in the region. The main nucleus should be the University Department of Child Health. That department should be the common meeting ground of the specialist paediatricians of the region. As well as training medical students it should provide special post-graduate facilities for those interested in child health. In each hospital management committee area, there should be a main paediatric unit where the paediatricians of the area could meet. At these units the child welfare medical officers and the general practitioners would make contact with hospital practice by attending ward rounds, etc. In this way, round such a paediatric unit, might be built a team similar to that contemplated for obstetrics.

The suggestion has also been made by Dr. Mackay that all medical appointments to clinics and schools should be in the hands of regional boards. Quite apart from the fact that many members of regional hospital boards and, too often, their medical members, have no knowledge of or interest in preventive medicine, on the long-term view such an arrangement seems to me too remote and impersonal. If the child health service is to be built up on the basis of team work then the unit area, as it were, must not be too large.

In each region there should be a professional paediatric advisory committee which should include some practitioners associated with infectious diseases hospitals and representatives of local authority medical officers and G.P.s. There should also be a committee of the regional board with responsibility for the paediatric hospital services as there is a committee for the maternity hospital services. In view of the heavy commitments of members of regional hospital committees, there is a case for one committee consisting mainly of lay members of the board undertaking responsibility for both the maternity and paediatric hospital services. The co-optation of a professional member or members from each of the advisory committees on maternity services and paediatric services, as well as a representative of the local authority maternity and child welfare services, would ensure that all professional points of view were adequately represented. It would be necessary also to have contact with the local authority in the region and this would be done either through the regional advisory committee of medical

officers of health or through a committee such as the Liaison Committee which has been set up in my own region to maintain contact between the regional hospital board and the local health authorities. Whatever method may be adopted the results can only be achieved over a period of years and, even then, only if all branches of the service feel that any contribution they may have to make to the final plan has received fair and adequate consideration.

### THE ORGANISATION OF A CHILD HEALTH SERVICE

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Upon a subject which for the last 40 years has been a main interest of the public health service, my observations naturally will be influenced by experience in the organised child health service which has been developed by local government authorities.

In this short paper it is not possible to deal at length with the history of these services or with the legislation which has brought them into being. The conditions which led to their establishment, the pioneer work of voluntary bodies and the personalities identified with the various movements are well known to you, and I only refer to this historical background because there are certain features in it which merit attention now that the organisation is being considered as a planned and fully integrated service.

During the last four decades Parliament has given to local authorities powers to organise child health services, which appear, even to those within the service, astonishingly wide, and each piece of legislation has been accompanied with departmental directives which set out in precise terms the nature of the statutory powers conferred, whether mandatory or permissive, and the lines upon which the particular branch of the service could be organised. A study of these directives is a study of the methods of government in a democratic state; and the impressive results which have been obtained are familiar to all.

This extensive body of legislation, however, being spread over a long number of years, but without any consolidating enactment, resulted in the public service being organised to a considerable degree upon a sectional basis, and the fact that more than one Government Department was concerned with the administrative provisions of the legislation increased this tendency.

Not only have the services been established in an unco-ordinated manner, both in time and direction, but the agents used to implement the Acts (the local authorities themselves) were of widely varying character—differing in area, size of population and financial resources. These features are recalled because the changed pattern of administration brought about during the last five years may not be fully appreciated by many who are now giving thought to the devising of a complete and integrated child health service, the organisation of which depends so much upon the powers and character of the responsible administrative bodies.

In the last five years three major pieces of social legislation have been passed—the Education Act of 1944, the National Health Service Act of 1946 and the National Assistance Act of 1948. Each of these Acts has a bearing upon the health and welfare of children. In an administrative sense the Acts are consolidating measures, for they greatly reduce the number of local authorities who have special responsibilities with regard to child health and child welfare: these responsibilities being now confined to county and county borough councils, who for the most part are reasonably able to carry out their duties. Some 14 millions of the population are resident in county boroughs and 29 millions in the administrative counties, including 3½ millions in the area of the London County Council, and it is in the larger administrative counties that this consolidating effect is well marked. In my native county, for instance, where apart from the county boroughs, there were formerly 27 local education authorities and a similar number responsible for the

maternity and child welfare services, there is now only one, the county council, which as the education authority and as the local health authority has jurisdiction for the whole of the administrative county.

These three Acts require careful and detailed study and though the future will decide how much has been gained or lost by these changes, it is fairly clear that in linking the curative with the preventive and welfare aspects of child health, the administrative problems have been greatly simplified. No doubt minor alterations will be made from time to time, but the broad pattern of administration upon which the services can be organised is now well defined. Turning then from administration to organisation it will be at once apparent that just as the number of administrative bodies have been reduced, so almost to an equal extent the number of chief administrative medical officers, those who will be mainly responsible for organising the services, has also been reduced.

On the other hand, the technical staffs of many authorities will be increased in number and in the administrative counties there will be better opportunities for organising field investigations and those other forms of research in which team work plays so large a part.

This is not the occasion to set forth the manifold duties and responsibilities of administrative medical officers. By whatever title they may be called, they with their staffs will be concerned with organising the child health services for which their authorities are responsible in either the curative or preventive branches, and for devising and carrying out measures which in due course will lead to a unified child health service with all the dynamic possibilities which that term implies.

It has been pointed out, that for reasons beyond their control, the medical services of local authorities have been developed on a sectional basis, though many instances could be given where this method of organisation has proved valuable in setting standards of efficiency which otherwise might not have been attained so rapidly.

Nevertheless, as many of you know, within the organised child health services of local government authorities a large amount of integration has already taken place. Under the new conditions this process will gain a fresh impetus, for in the past the establishment of a child health service with the preventive and curative branches closely linked has been a frequent subject of our discussions and writings, and each successive Act has been anxiously scanned for any clause or section which could be applied to this end. Thus for a long period the vision of such a service has been an inspiring objective to those concerned with the routine of administrative action, with all its complications and perplexities, and a hoped for development to the much greater number of medical officers who have carried out the inspectorial, educational and remedial duties which are the basis of preventive work.

These are matters for encouragement to all, but there is another factor which deserves serious consideration.

The legislation referred to above is quite comprehensive, so much so that it stands as a direct challenge to our organising abilities. How then shall we proceed toward our objective?

To organise the services in accordance with the new powers it is necessary to consider the resources which are available, so that they may be used to the best advantage. It must be admitted that in every respect—premises, equipment and staff—the means at our disposal for increased provision are severely limited.

Expenditure has never been at a high level and we know full well that many, probably the majority, of the centres and clinics—numerous though they may be—are unsatisfactory places in which to carry out health services. Deficiencies of this nature, however, do not impede improvements in organisation to any material extent. Though standards vary there are many well-planned medical centres in which diagnostic, curative and preventive services can be organised on lines which ensure a proper degree of co-ordination, and mark out paths which may be followed.

Our real difficulty and the one which will test our organising abilities is on the question of staff—the foundation upon which all services depend for their efficiency. This is not only a long-term problem, but one which involves questions of priorities,

for there are many competing interests. The legislation which has stimulated our thoughts and which enables us to approach afresh the problems of an integrated child health service has also given to other branches of medicine additional competitive strength, and the wastage which is occurring in the public dental service is a danger signal which clearly indicates that gains in one direction may be more than offset by losses in another.

The provision of staff, however, with the requisite training and outlook cannot be readily obtained unless the avenues for recruitment are soundly based, and though local authorities may make the actual appointments they are only indirectly concerned with the training, either of medical or nursing staff. This is a profitable subject for discussion, but for the present it is more advantageous to examine the resources which are immediately at our disposal, and how we can use them in the most efficient manner. Engaged whole-time in the organised child health services of local government authorities, there is a very considerable body of trained personnel, medical, nursing, and let us not forget experienced lay administrative staff, the latter providing very necessary elements of continuity to the organisation. All thus engaged are conscious both of the incompleteness of the services and of the difficult problems still in need of solution; problems which, apart from the incidence of inherited and acquired defects and disease, embrace those social and environmental conditions which are prejudicial to the physical and mental health of large numbers of the children.

It should be kept well in mind that these services have been established—not for the purpose of providing careers or opportunities for professional advancement—but because there was and still is an urgent need for their development in order to raise the general standards of health. This most extensive organisation, operating over a period of years, has now a large amount of accumulated technical knowledge at its disposal and much experience in the technique of organisation. On the other hand it is apparent that a considerable number of years will elapse before there is a comparable development of children's hospital departments with which this organised service can be integrated.

There is, of course, general agreement that the pre-requisites of a fully organised child health service include modifications in the medical curriculum, the establishment of more professorial units and a better distribution of children's hospital services throughout the country, and these developments will receive universal support. Meanwhile, we can take steps to improve the existing organisation, to maintain the position already gained and in addition to take advantage of new knowledge which can be made use of either on a limited scale or may be found suitable, for widespread application. One of these steps concerns the question of recruitment, and the long-term aspects in this connection have been mentioned. Another important matter for consideration is the nature of the service and the conditions suitable for attracting the desired quality of personnel, for certainly, so far as the curative aspects of child health were concerned, the position in the past has not been satisfactory. The argument is indeed exceedingly strong, that a child health service with all its social, environmental and educational aspects, embracing curative and preventive measures, can only be organised on a basis which provides for the employment of specially trained staff engaged whole-time, in plain words mainly a salaried service. However this may be it is certain that extensive branches of the service which are the direct responsibility of local health and local education authorities must of necessity be staffed by officers who are free from those commitments which may prevent them from being available for fixed occasions, in the schools, clinics and centres or for other pre-arranged duties at times convenient to the public.

There are difficulties at the present time with regard to conditions of service, including not only the question of financial rewards, but also those defects of organisation which have resulted in many able and experienced officers being engaged in duties which tend towards monotony, or have other limitations. The opportunity of removing defects of this nature now presents itself and proposals to that effect will no doubt take a foremost place in our discussions.

Although the assumption has been made that the majority of the personnel will be engaged whole time, the organisation should have a considerable degree of elasticity, and take that place in the National Health Service which its importance demands. No child health service can be organised on the most effective lines which does not gain the support and practical co-operation of the medical and nursing professions as a whole. Already a certain degree of augmentation in the local health authority services has been achieved by the engagement of general medical practitioners, dental surgeons and nurses on a sessional basis. The beneficial effects which will result from an extension of this development do not need elaboration. The obstacles to part-time employment will not be administrative, but will arise from the increased commitments of general medical practitioners and other calls upon the technical resources which are at present available.

Another valuable measure which will enable us to advance towards our objective is by the interchange of hospital staffs with the officers of local health authorities. Again something of this nature is already operating in connection with infectious diseases, including tuberculosis, and this interchange can, and should be developed, wherever conditions permit. It is a feature of the organisation which is practicable and if it involves a system of joint appointments there seem to be no valid objections from a professional point of view, to its adoption. Until such time as this interchange can be widely extended we should co-operate in making arrangements for the interchange of visits between hospital and local health authority staffs within the areas served by the hospitals.

The arrangements suggested are not of the casual and somewhat perfunctory nature which have existed hitherto, but are intended as a permanent feature of the organisation, bringing together the several branches of the service, pooling information and giving those opportunities for discussing and observing children—either individually or in groups—which stimulate interest and promote researches in this wide and nationally important field of work.

In these brief observations I have set out certain legislative and administrative aspects which are the basis of an organised child health service, and to indicate lines of action, which to a limited extent are already operating, and which by improved organisation seem capable of being extended.

I have endeavoured to indicate the importance of this legislative and administrative structure and the degree of control it must exercise in matters of organisation.

The present defects—and these appear capable of being remedied—can mostly be traced to the manner in which medical services generally have evolved. The new legislation has removed many barriers and the way is now open for a service to be organised, in which all interested in the problems of child health can participate and make their contribution according to their abilities and the knowledge which they possess.

A report of the discussion on the above papers and of the other sessions of the joint meeting will appear in our next issue.

## CORRESPONDENCE

### ORGANISING THE CHILD HEALTH SERVICE

To the Editor of PUBLIC HEALTH

Sir,—The question of whether clinical public health officers are to be allowed to take part in curative services is, in my opinion, likely to decide whether clinical public health services survive at all. I regretted the expression of opinion on this matter in the editorial under the same title in your September number, and suggested that a questionnaire should be circulated to ascertain the views of members of the Society. I have had no reply to my suggestion, but the M. & C.W. Group Executive Committee have invited me to express my views in a letter.

Formerly an M. & C.W. officer, in addition to her present duties, could expect to have the care of foster-children, following up of cases through the H.V.s, supervision of the work of the H.V.s, and perhaps midwives, administrative duties as the link between the mothers and children, and the M.O.H. and Committee, including initiation of changes according to local conditions. In fact, hers was the responsibility for the care of the children in her area now divided among several. She also probably had much more ante-natal work, and at least some post-natal work, and was allowed to treat minor ailments.



All that has gone except the reduced ante-natal clinics, and even the educational work is being diverted. Health visitors are being asked to lecture in schools, etc., and some authorities have appointed lay health education officers.

Obviously, we were miracles of industry before, or now we haven't enough to do. What do we profess to do? To advise mothers about hygiene and infant feeding, but note, only those who require no "treatment," even of the simplest. Is it enough, and can we affirm with confidence that we can do it so much better than a well-trained H.V. as to justify our existence, while admitting that all H.V.s are not ideal? Is it enough to keep our brains working?

Some would say that we also detect the earliest stages of disease, and presumably diagnose it, but, generally speaking, that is "bunk," as were similar claims formerly made about the clinical diagnoses of tuberculosis.

As for the purely administrative officers, what do they do? I believe a great mistake has been made in separating clinical and administrative duties.

Unless our scope is extended, I believe that clinical public health officers may very soon cease to exist. Some would say, "Why not? Let the H.V.s run the service and refer the cases they can't deal with to the general practitioners, who are much better informed in child welfare and infant feeding than they were 20 years ago, and all cases requiring even very simple "treatment" have to go to them now." It is certainly a point of view, but the corollary would be the disappearance of M.O.H.s also. Health visitors and possibly sanitary inspectors would not remain content under medical officers straight from college with no experience as assistants. The end result would be a lay administrator in charge, with possibly a medical officer in an advisory capacity, and a superintendent H.V. and sanitary inspector in charge of their departments.

The chief point in favour of retaining clinical public health officers is that, under present conditions, most general practitioners, at least in towns, have not the time to do the work. Also, those who have chosen to work particularly with children will probably give better service. But, if public health officers are to survive, they must be given some part in the curative service. We must face it, however, that for hospital work we are, generally speaking, less well qualified than very many would-be budding paediatricians, many with memberships, and, certainly, we can't expect to start at the top or anywhere near the top. Even the highest started as out-patient physicians, and to demand full charge of beds straight away reminds me irresistibly of an M.O.H. who got rid of a hostel scheme for unmarried mothers and babies, agreed on by everybody else, by insisting on hot and cold water in every bedroom.

On the other hand, it isn't altogether our fault that we are not better qualified, at least those of my generation. Memberships were not so common 20 or 30 years ago, or hospitals so lavishly staffed, and very few hospital posts were open to women. Even if we had started off with the highest qualifications, our standard would have fallen steeply, owing to the very narrow clinical scope of our work. Some of us would have been glad to seize opportunities of wider clinical experience during the war, but we were "frozen in."

Then let us have back the treatment of minor ailments which is a part of preventive medicine. Take, for instance, the prevention of deafness by treating otorrhoea efficiently before it becomes chronic. What happens as a rule? The mother is sent home by her own doctor with a bottle of drops and left to get on with it. How can she, single-handed and untaught properly, clean a small child's ear? Septic cases need not, of course, be treated at the ordinary sessions.

Help with minor ailments attracts the type of mother we particularly want. The type who will come in any case is often so well informed already that one can teach her little.

I have heard scathing remarks from among ourselves about letting a welfare clinic degenerate into a casualty department, but I have always believed that what is useful to the mother is worth doing, and if everybody did the work under their noses it would be so much better all round. I often feel that some M.O.H.s at least may have very little idea of what actually goes on at a welfare centre or they would be more sympathetic about treatment. It is no answer to say that the general practitioners don't like it, or that the committees or the Ministry are responsible. Surely it is the M.O.H.'s part to interpret to these what is required, and perhaps even to reveal to their assistants their reasons if they themselves object. Dr. Helen Mackay's idea of paediatric members of a G.P. firm is attractive, but even with capital it is very difficult to get into general practice now, except as an assistant without view, and that is not attractive. In the meantime, what is to become of us? Not, I hope, to remain on the shelf merely waiting for superannuation. I think it a pity if there is to be no questionnaire, but I hope other members will express their views.

I am, etc.,

ETHEL R. EMSLIE.

"Vineyards,"  
Great Baddow, Nr. Chelmsford.  
October 28th, 1949

# "ONE MAN BAND" EPIDEMIOLOGY

To the Editor of PUBLIC HEALTH

Sir,—Those of us who have watched with pleasure and satisfaction the growth of the Public Health Laboratory Service, and have come to appreciate the enormous help which it has been able to give us in the control of epidemic disease will scarcely support Dr. Alexander Hutchison (in his paper printed in your October issue) in his advocacy of the new "One Man Band" school of epidemiology, where the Medical Officer of Health in splendid isolation sweeps away an epidemic by his own unaided skill.

Dr. Hutchison must however be congratulated on his courage and honesty. He does not base his advocacy of the O.M.B. School of Epidemiology on the grounds that the Public Health Laboratory Service is inefficient, nor on the grounds that the M.O.H. could carry out more satisfactorily or more efficiently the laboratory epidemiological work which the Public Health Laboratory Service offers to do on his behalf. Such a claim would indeed be manifestly absurd. He bases his claim on the thesis, to use his own words, that "to resort to calling in an outside source," that is, the Public Health Laboratory Service "whenever he is in difficulties is a policy that will only lead to . . . the work being taken out of his hands."

What sterling honesty!

Let us analyse the work of the O.M.B. epidemiologist. He has to take a "refresher course in bacteriology." We are told, and can readily accept, that it takes two years to train fully a competent bacteriologist, and even if we assume that the One Man Band man will learn the job much more rapidly, we must confess that the amount of time available for this "refresher course" will probably be something a little less than a term's work of two afternoons a week. Presumably it will not be a correspondence course!

The course advocated by Dr. Hutchison is a "refresher course," that is, it is intended not to make him an efficient bacteriologist, but merely to bring his existing exiguous stock of D.P.H. bacteriology up to date. He will not be taught to do phage typing, biological work on animals, coagulase testing, serological work on virus diseases, such as smallpox, etc.

We can now visualise this New-Look Medical Officer of Health tackling an outbreak of smallpox. He may, of course, as Dr. Hutchison suggests call in a senior colleague, and this will solve his problem immediately, for any colleague with even a moderate knowledge of smallpox would at once advise him to seek the help of the P.H.L.S. If he did not, he would be compelled to diagnose the cases by clinical examination alone. This was tried in the Midlands two years ago and we know the result!

His tackling of an outbreak of pemphigus neonatorum in a hospital would be interesting. He would at once take smears from swabs from all and sundry, and with his intensive knowledge of bacteriology might well find that 90% of the babies and the children harboured coagulase-positive staphylococci in their noses and on their hands. Sorry, he wouldn't know they were coagulase positive! What would he do next? Close down the hospital for one month, three months, a year, until all the staphylococci had disappeared?

He wouldn't be popular. He couldn't trace the offending case because his knowledge of bacteriology would only be a "refresher" one and he couldn't do phage typing. Perhaps phage typing is new fangled and wouldn't interest him.

His conduct of an outbreak of paratyphoid fever would be more interesting to his colleagues in distant parts of the country than to his neighbouring Medical Officer of Health or his victims! Dr. Hutchison naively states that bacteria had not changed their habits very much and still behave and act as they did in days gone by. This is not quite true, as the streptococci would themselves claim, but what has changed is our knowledge of their action and their habits, and the change in our knowledge is comparable to the changes between the knowledge of warfare possessed by the British Army in the Boer War and its technical efficiency in the 1939-45 War.

The Medical Officer of Health of the past ten years has been so immersed in administrative work that he has not been able to keep up his knowledge of field epidemiology. He is, however, the only field epidemiologist available, and unless he takes an intelligent interest in this branch of work and continues to do so in the future as his predecessors did in the past, he will rapidly lose his position in order that somebody who *does* take an interest in the job may carry out this work in the public interest. Where are the field epidemiologists now of the stature of Stallibrass and Savage, both of whom have unfortunately retired? The criticism which the Public Health Laboratory Service might genuinely make against Medical Officers of Health is not that the latter are too keen on their epidemiological work in the field, but they are not sufficiently interested, and I have personally found that on any occasion when I have approached any bacteriologist in the Public

Health Laboratory Service for assistance, it has been given freely, gladly, and efficiently, and our problem has always been regarded as one calling for team work, which can be supplied only by cordial co-operation between the field epidemiologist and the laboratory worker.

The Medical Officer of Health who endeavours to carry out his investigation into and control of infectious diseases completely on his own is incompetent and unworthy to carry on his job, and may be a serious menace to the community which employs him.

Yours, etc.,

HUGH PAUL,

The Uplands,  
Hales Lane,  
Smethwick,  
October 28th, 1949.

Medical Officer of Health.

### CONFERENCE ON HEALTH EDUCATION

The National Conference on Health Education, organised by the Central Council for Health Education, was held at the Central Hall, Westminster, on November 8th and 9th and was very well attended by representatives of local authorities, voluntary bodies and industry.

LORD WOOLTON, president of the Central Council, was in the chair for the opening session. He confessed to being bewildered by the complexity of medical knowledge and its specialisms of which the latest manifestation was the influence of the *psyche* over the body and the new researches into psychosomatic medicine. There was therefore all the more need for a body such as the Central Council to interpret the discoveries of medical research so that they could be usefully applied amongst the people. He thought that much happiness had resulted from the public health services, but there was still a vast field for improvement, for instance, in the physical form of our race. Just as in industry engineers took infinite pains to find out the best fuels for the working of their machines, so medicine should pay more attention to the nutritional state of the well body, in addition to prescribing special diets for the ill. The general practitioner should be giving guidance to the man in the street on right feeding. One could only believe that the foodstuffs available and the digestive apparatus of man were out of harmony if one judged by advertisements of patent medicine in the Press. Communal feeding seemed to him to give a great opportunity for education in food values. The medical profession and the local authorities therefore still had much to do, especially in rousing the public consciousness of positive health.

Prof. W. O. LESTER SMITH (Institute of Education, London University) spoke on "The aims and methods of health education" from the point of view of the educationist. He thought there had been a revolution in the approach to the teaching of health in the schools during the time with which he had been associated with education. Now the emphasis was on positive health and the subject was permeating the whole curriculum rather than being taught as an individual and rather unwelcome special subject.

Prof. ANDREW TOPPING (Department of Social and Preventive Medicine, Manchester University) spoke on "Health education and the prevention of disease." He thought that the medical profession was to blame for the general lay attitude towards sickness; i.e., that anatomy, physiology and pathology were esoteric subjects beyond the understanding of laymen and that the less they knew about the causes of ill-health the better for their peace of mind. They must debunk that point of view. It was an unpalatable doctrine that 90% of minor illnesses from which people suffered were due to their own fault as individuals. The attitude of "enjoying" ill-health must be abolished. The best hope of changing this attitude was health education aimed at the young. He thought it desirable, in order to show the claims of health education, to recall what had been accomplished. The infant mortality rate had fallen to an extent not thought possible 20 years ago. Improvements in environment or hospital or domiciliary services or variations in the birthrate had not been marked in those 20 years and the only significant change had been the development of the infant welfare service with a primarily educational function. Most of the present race of young mothers had been brought up on the lines taught by doctors and health visitors in the welfare centre and at home that teaching had played the major part in saving the lives of thousands of babies every year. In the same way much of the credit for the decrease in the maternal mortality rate was due to the educational work of antenatal clinics. He himself as a Medical Officer of Health in Lancashire had had direct experience of the effect of enlightening the public on the real facts about pregnancy and childbirth in reducing the unnecessarily high maternal mortality.

Regarding nutrition there was no doubt that the essential foodstuffs now available and consumed by the poor classes were

quantitatively and qualitatively better than before. Availability and equitable distribution of these foods had improved the nutritional state of the whole population, an advance which could not have been achieved by legislation without full use of educational publicity as well. The potentialities of health education were perhaps greater in the field of infectious diseases than any other. Most of these diseases were avoidable and the less mystery that surrounded them the better. The public should be told in very simple language exactly how infection is spread, not least in regard to the bowel infections transmitted through faulty handling of foods. Tuberculosis was a social disease due as much to defects in environment, nutrition and to ignorance as to an actual infection. Education on healthy living should therefore have a great effect on reducing the incidence, especially amongst the lower social groups.

Turning to the "unavoidable" diseases, he said that the increased expectation of life made it inevitable that a larger number would die of heart disease and malignant disease, both of which affected older people, but, here again, education could play an important part in getting early recognition, advice and treatment. The latest knowledge about cardiovascular disease showed that a high blood pressure by itself had little significance. Public realisation of this would result in thousands of people who now lived a semi-invalid or restricted life resuming their place as useful citizens. In regard to cancer he was convinced that if the facts were put squarely before the people many cases would be caught early enough for successful treatment and "cancerphobia" could be scotched. He concluded by saying that the existence of an educated and receptive public was necessary if they hoped to become a really healthy community. Achievement of good health depended on personal effort guided by knowledge of facts presented to it in an easily assimilable form. The onus for this work fell squarely on the shoulders of the medical officers of health of local authorities, backed by the resources of the Central Council for Health Education.

At the second session the chair was taken by Sir WILSON JAMESON, Chief Medical Officer of the Ministries of Health and Education. He expressed his conviction that there were great advantages in the fact that the Central Council would be supported in future by the local authority rather than by central Government sources, although the contribution made by local authorities would attract a 50% Exchequer grant. He felt that health education was essentially a subject for local endeavour and must be completely disinterested and dissociated from any hint that it was putting over Government propaganda. Mr. D. R. HARDMAN, M.P., Parliamentary Secretary to the Ministry of Education, spoke on the part to be played by health education in the schools, backed by a good home life. He was particularly anxious to see boys as well as girls given some domestic science training in schools, so that they could appreciate the delights of good eating and of growing good natural food. This might succeed in changing the taste of children from that for pastry to that for well-cooked vegetables. Health education as a whole should not be a "school" subject, but an attitude of mind which should be part of the school environment.

Prof. R. H. PARRY (Medical Officer of Health, Bristol, and Professor of Preventive Medicine, Bristol University) spoke on "Health education and the promotion of health." The phrase, "positive health," had, he supposed, been evolved in order to bring home to the individual that through his own initiative something could be generated and developed in the body which would result in a maximum of vitality of body and mind. From childhood to old age the individual must be reminded continuously of minding and keeping his own health. The first and last ages of man were the two periods when human beings were least adaptable to their environment. The growing baby acquired his habits to help him to adapt himself; the old person clung to those to which he had been accustomed for so long. Habit training was possible at all stages of life, although the child was the easiest pupil to manage. The conclusion was that health education should start very early in life, but could continue to old age. To the former it meant grafting on new knowledge; to the latter pruning away old habits. He was a little frightened by experts in psychology and asked whether they could not use the old-fashioned expression "common-sense" much oftener. Official assistance and interference in personal problems should come as a last resort, for many of the matters classified as psychological problems were matters for the person's own private enterprise in his tactical approach to the risks of everyday life. He did not believe that every experience of childhood was indelibly impressed upon the person's character throughout life. The knocks that the child received whilst growing up decided his ultimate shape, but they would not re-emerge at odd moments to unsettle the healthy course of his life. He must be taught to stand with confidence on his own feet and to measure for himself the forces working for and against him. If training in healthy habits could not be started too early it was clear that



the nursery school was a valuable place, but the home itself was the best school of all. Good habits learnt at school and elsewhere could often be unlearned at home, but it was very unlikely that good home training would be other than strengthened by school life. The mother might want assistance from the health visitor or family doctor, but as the trainer of the child she could not be replaced by anyone. Whatever advantages there might be in having mothers employed in industry the loss thereby to her child must be put on the debit side. The school child could best be helped by close co-operation between parent and teacher, the latter being kept up to date on health matters by the school medical officer. In puberty and adolescence the parent again was the best guide. Health visitor, teacher and family doctor could help, too, and not come between the child and his parent. Training in biology at school should supply sufficient basic sex education backed by private personal instruction from the parents. It was most important that such problems should be tackled and dealt with adequately. They all hoped that in future the family doctor would have sufficient time to be the family friend and adviser on all health problems, but a healthy adult did not need expert medical knowledge to keep his fitness and a healthy life. He should know some elementary biology and the capabilities of his own body and how to use his reason and have available an occasional word on personal cares and problems. Lastly Prof. Parry spoke of the risk that retirement from active work might be a great danger to health in the later years of life and quoted Sir Humphry Rolleston's dictum that senility is catching.

Dr. ROBERT SUTHERLAND, medical adviser and secretary of the Central Council, spoke on "Health education in practice and the local authorities' part." He advised any local authority which wanted to embark on health education work to get a clear idea of its aims. Departments of knowledge must be synthesised to deal with the complexity of man's nature and the forces that surrounded him. The Central Council had followed this method of teamwork by assembling a group of expert officers each with a definite field of knowledge. In the past sanitary measures had been imposed on the people by wiser men than them. In future the leaders from the people itself would seek for applied knowledge on health matters. There were too many bodies in this country unfit for human habitation and incapable of being made fit at reasonable expense. He suggested medical officers of health should study the findings of their annual reports and the morbidity statistics to discover new opportunities for health education. We must discover from the people themselves what they considered to be their significant health problems. On the question of resources it was worth while finding out who were the people in the community who were prepared to take an active part in health promotion campaigns. He was impressed at the extent by which the Americans discovered such persons. Lastly the evaluation of results needed much study. The appointment of whole-time health education officers on the staffs of medical officers of health had not so far made much progress in this country. It was a job which needed proper training and the Central Council was going to pursue the question of postgraduate instruction with the universities. They were trying an experimental seminar for health education officers immediately following this conference.

The Central Council took the opportunity of the conference of holding a dinner at the Park Lane Hotel on the evening of November 8th, at which many who had been prominent in the work of health education spoke, and special tribute was paid by Dr. E. K. Macdonald, chairman of the Central Council, to the members of the advisory panel, who had done so much valuable work. Other speakers included Lord Woolton, the Lord Chancellor, Col. Walter Elliott, M.P., Dr. Charles Hill and Mr. Kenneth Bird ("Fougasse").

The exhibition which accompanied the conference was quite the most comprehensive collection of health education material and apparatus ever assembled and aroused much interest.

#### Aureomycin and Chloromycetin

The Ministry of Health has issued the following notice:—

These drugs are scarce and costly. Their use can be justified only for conditions in which they are considered likely to be beneficial. To ensure that the available supplies are used to the best advantage, the Ministry of Health has arranged to purchase all available supplies of both drugs and to distribute them through Regional Hospital Board Centres previously used for distribution of streptomycin. Hospitals outside the National Health Service will be able to obtain supplies of aureomycin and chloromycetin from these centres on payment.

These arrangements will operate from November 21st, 1949.

On the advice of the Medical Research Council it has been decided for the present to confine the use of these drugs to the treatment of the following conditions:—

#### Aureomycin

Suspected cases of Ornithosis.

Proved cases of Undulant Fever (Brucellosis), Lymphogranuloma Inguinale.

Severe cases of Atypical Pneumonia in which there is good reason to believe that the cause is a virus.

#### Chloromycetin

Suspected cases of Ornithosis.

Proved cases of Undulant Fever (Brucellosis), Lymphogranuloma Inguinale, Typhoid Fever, Paratyphoid Fever (severe), Salmonella Septicaemia.

These categories are under constant review and may be added to from time to time in the light of current expert advice.

A list of the Regional Distribution Centres is appended.

#### AUREOMYCIN AND CHLOROMYCETIN DISTRIBUTION CENTRES

(Telephone numbers in parenthesis)

Area No. 1, Newcastle R.H.B.: Newcastle-on-Tyne General Hospital, 418, Westgate Road, Newcastle, 4 (Chief Pharmacist, New. 35211).

Area No. 2, Leeds R.H.B.: Leeds Blood Transfusion Laboratory, The Bridle Path, York Road, Scarcroft, Leeds 45091/3.

Area No. 3, Sheffield R.H.B.: City Hospital, Hucknall Road, Nottingham (Nottingham 66292 (3 lines)).

Area No. 4, East Anglian R.H.B.: Addenbrooks Hospital, Cambridge (Chief Pharmacist, Cam. 4451).

Area No. 5, N.W. Met. R.H.B.: West Middlesex Hospital, Twickenham Road, Isleworth, London (Chief Pharmacist, Hounslow 2311).

Area No. 6, N.E. Met. R.H.B.: Mile End Hospital, Bancroft Road, London, E.1 (Physician Supt., Advance 2873/7).

Area No. 7, S.E. Met. R.H.B.: Grove Park Hospital, Lee, London, S.E.12 (Lee Green 1077/8).

Area No. 8, S.W. Met. R.H.B.: South London Blood Supply Depot, Benhill Avenue, Sutton, Surrey (Vigilant 0068).

Area No. 9, Oxford R.H.B.: United Oxford Hospitals, Churchill Hospital, Headington, Oxford (Chief Pharmacist, Oxford 48651).

Area No. 10, South-Western R.H.B.: Ham Green Infectious Disease Hospital and Sanatorium, Bristol (Bristol 31165).

Area No. 11, Wales R.H.B.: City Isolation Hospital, Canton, Cardiff (Med. Supt., Cardiff 960).

Area No. 12, Birmingham R.H.B.: Selly Oak Hospital, Birmingham (Med. Supt., Selly Oak 1361).

Area No. 13, Manchester R.H.B.: Manchester Royal Infirmary, Manchester 13 (Chief Pharmacist, Ardwick 3300).

Area No. 14, Liverpool R.H.B.: Fazakerley Sanatorium, Liverpool, 9 (Med. Supt., Aintree 2324).

#### BIRTHS, MARRIAGES AND FERTILITY IN 1947

The Civil Tables volume of the "Registrar-General's Statistical Review for 1947," issued on October 31st\*, reveals that the birth-rate again rose, illegitimacy continued to decrease and the stillbirth rate per 1,000 total births (live and still) was the lowest ever recorded in this country up to that time. The marriage-rate rose slightly, but, as was the case in 1946, divorces were almost double the previous year's figure.

**Births.**—There were 881,026 live births in 1947, which represented a birth-rate of 20.5 per 1,000 total population. This was an increase of 1.3 per 1,000 over the previous year and was the highest rate since 1921 when it was 22.4. This post-war rise in the birth-rate was not maintained in 1948 when the rate fell to 17.9 (provisional).

Of the live births, 196 were to mothers under 16 years of age and 16 to mothers aged 50 or over (three of whom were aged 55 or over).

There were 46,603 illegitimate live births, compared with 53,919 the year before. Shown as proportions of the total number of live births, these figures represent 5.3 and 6.6% respectively.

Stillbirths numbered 21,795, representing a rate of 24 per 1,000 total live and stillbirths compared with 22.915 and a rate of 27 in the previous year. This was the lowest rate recorded up to that time, but it is now known that the 1948 rate was 23 (provisional).

**Marriages.**—In 1947 marriages numbered 401,210, the highest number since 1940, when it was 470,549. The marriage rate per 1,000 total population was 18.6 compared with 18.0 and 18.7

\* "The Registrar-General's Statistical Review of England and Wales for 1947," Tables, Part II Civil. H.M. Stationery Office, price 3s. net (or by post from P.O. Box 569, S.E.6. Price 3s. 3d.).

in 1946 and 1945 respectively. In 1948 the rate was 18.1 per 1,000 (provisional).

The most popular age for marrying was 23 for men and 21 for women; there were 78 males and 1,519 females married at the age of 16 years.

**Fertility.**—46.9% of the legitimate maternities during the year were to mothers with no surviving previous children; 29.6% to mothers with one surviving previous child and 12.5 to mothers with two. There were 11,221 maternities, resulting in multiple births of which five were quadruplets and 86 triplets.

Of about 113,000 confinements which took place with eleven and a half months of marriage some 39,000 occurred within eight months, and of these about 8,000 occurred within six and a half months of marriage.

**Divorces.**—The number of decrees nisi made absolute during 1947 was 60,190 compared with 50,298 during 1946 and a yearly average of 8,288 for the ten years from 1936 to 1945.

During the year 23,087 petitions were filed at the Divorce Registry in London and 25,717 at the District Registries. Of the London petitions 9,177 related to childless marriages, 7,442 to marriages with one child, and 3,946 to marriages with two children; 10,524 of the marriages had lasted for more than ten years and of these 2,901 had lasted 20 or more years.

### VITAL STATISTICS, ENGLAND AND WALES. JUNE QUARTER, 1949

Provisional figures published on October 26th in the Registrar-General's Quarterly Return\* show that the stillbirth rate for the June quarter, 1949, was the lowest recorded for any June quarter and equalled the lowest ever recorded for any quarter. The infant mortality rate was also the lowest for any second quarter.

Also included in this return is a special tabulation showing the monthly experiences of sickness, medical consultations and incapacity for work recorded by the social survey during the years 1947 and 1948 for men in broad occupational and income groups. It is thought that this may be useful to industrial medical officers, who need a yard-stick with which to compare the experience in a particular factory or industrial undertaking.

There were 4,470 stillbirths registered during the quarter, giving a rate of 22.7 per 1,000 live and stillbirths, compared with 4,746 and a rate of 22.8 in the same period a year ago. The lowest rate for any quarter was first recorded in the September quarter last year, when it was also 22.7 per 1,000.

Deaths of children under one year of age numbered 5,694, representing an infant mortality rate of 30 per 1,000 related live births, compared with 6,357 deaths and a rate of 31 per 1,000 in the same period last year. The lowest rate ever recorded for any quarter was 28 in the third quarter last year.

**Births.**—The number of live births registered was 192,166, giving a rate of 17.7 per 1,000 total population, which may be compared with 18.8, 21.9 and 19.1 in the second quarters of 1948, 1947 and 1946 respectively.

Of the births registered 98,821 were males and 93,345 females, a proportion of 1,059 males to every 1,000 females. The average proportion for the second quarters of the ten years 1939-48 was 1,061 males per 1,000 females.

The number of illegitimate births included in the total was 9,595 or 5.0% of the total births registered, compared with 11,506 or 5.7% in the corresponding quarter of 1948.

**Deaths.**—119,984 deaths were registered during the quarter, giving a rate of 11.1 per 1,000 total population. This compares with 110,257 deaths and a rate of 10.2 for the corresponding quarter of 1948, and an average death rate of 10.7 for the second quarters of the five years, 1943-47.

Deaths from acute poliomyelitis and polioencephalitis (provisional total, excluding non-civilians) number 28 compared with 28, 60, 83 and 27 in the four preceding quarters.

The diarrhoea death-rate for children under two years of age was 2.4 per 1,000 births (464 deaths) compared with 2.8, 2.7, 2.8 and 4.0 in the four preceding quarters.

There were five deaths which have been provisionally classified to smallpox. Fifteen cases of smallpox were notified during the quarter.

**Natural Increase.**—The births registered exceeded the deaths by 72,182, the corresponding natural increases for the second quarters of the years 1946, 1947 and 1948 being respectively 89,900, 117,181 and 93,336.

**Marriages.**—The number of persons married during the quarter was 190,052, which was 3,799 fewer than the average for the corre-

\*The Registrar-General's Quarterly Return of Births, Deaths and Marriages, No. 402. H.M. Stationery Office, price 1s. net (or by post from P.O. Box 569, London, S.E.1, price 1s. 1d.).

sponding quarters of the preceding five years, 1944-48, and represented a marriage rate of 17.5 persons married per 1,000 total population.

**Survey of Sickness.**—Out of 3,541 men interviewed 2,409 reported having had some illness or injury in February and there were 1,775 consultations with doctors; out of 4,297 women interviewed 3,379 reported having had some illness or injury in the same month and there were 2,413 consultations with doctors.

Illness or injury of some kind during a month in the period January, February, March, was reported by 73.1% of all persons interviewed; the average incapacity among all persons interviewed was 1.4 of a day per month.

Among housewives (36.4% of the total interviewed) 80.4% reported having had some illness or injury during a month, compared with the general level of 73.1%.

### ESTIMATE OF BIRTHS, SEPTEMBER, 1949 TO MARCH, 1950

The quarterly estimate of the numbers of live births to be expected in England and Wales as a whole during the next six months has been announced by the Registrar-General.\*

The final estimate for the December quarter is 171,000 and the provisional estimate for the March quarter, 1950, is 186,000-357,000 babies in the six months.

Last year there were 179,473 live births registered in the December quarter and 186,561 in the March quarter of this year—a total of 366,034.

In the week ended October 29th, there were 6,699 live births registered in the Great Towns of England and Wales compared with 7,044 in the previous week. This brings the total in those towns from the beginning of the year to 329,997 compared with 348,019 in the same period last year.

\*The Registrar-General's Weekly Return No. 43 for the week ended October 29th, 1949. H.M.S.O. Price 6d. net (or post free from P.O. Box 569, London, S.E.1, price 7d.).

### RETIREMENT OF THE CHIEF MEDICAL OFFICER

As we go to press, we learn that Sir Wilson Jameson, G.B.E., K.C.B., M.D., F.R.C.P., D.P.H., K.H.F., Chief Medical Officer of the Ministry of Health and of the Ministry of Education, is retiring from the public service on reaching the age limit on May 11th, 1950. Sir Wilson Jameson has been Chief Medical Officer since November 12th, 1940.

The Minister of Health and the Minister of Education have appointed John Alexander Charles, Esq., M.D., F.R.C.P., K.H.F., a Deputy Chief Medical Officer in the Ministry of Health, to the joint post thus vacated from May 12th, 1950.

George Edward Goddard, Esq., M.D., F.R.C.P., D.P.H., has been appointed Deputy to the Chief Medical Officer in succession to Dr. Charles from May 12th, 1950.

### MODEL BY-LAWS ON FOOD HANDLING : PLAQUES AND POSTERS

In connection with the Model By-laws, Series I, issued to local authorities with Ministry of Food Circular MF 18/49, the British Tourist and Holidays Board (Catering Division) desires to remind medical officers of health of the posters, plaques and stickers which it has issued in its endeavour to raise the standards of practice in catering establishments. Plaques A ("The Public Depend on You for Clean Food") and B ("Now Wash Your Hands") and D ("Clean Food Campaign," setting out the rules of health and prevention) should be particularly useful for permanent display as they are enamelled on tin.

B.T.H.B. offer further supplies of posters and plaques to medical officers of health free of charge where the intended use is in catering premises. These can also be supplied on a cost basis where the display is to be in other food-handling premises. Applications should be sent to the Secretary, Catering Division, British Tourist and Holidays Board, Queen's House, St. James's Street, London, S.W.1.

### BRIGHTON EDUCATION COMMITTEE

Applications invited from fully qualified registered Dental Surgeons for appointment as additional ASSISTANT SCHOOL DENTAL OFFICER. Inspection and treatment also of mothers and children under M. and C.W. Scheme, etc. Salary £670 per annum by annual increments of £30 to £910 per annum inclusive. Initial salary within scale according to experience of appointed candidate. Further particulars and forms of application from the undersigned, to whom applications must be sent within two weeks of appearance of advertisement. W. G. Stone, Education Officer, 54, Old Steine, Brighton.

## BOOK REVIEWS

**Canning Practice and Control.** By OSMAN JONES, F.R.I.C. 3rd ed. (Pp. 322 + xii. Fig. 121. Price 36s.). London: Chapman & Hall, 1949.

This is the third edition of the well known work by Osman Jones and T. W. Jones. The size is the same as the second edition but eliminations have enabled newer developments to be discussed, such as new tin erosion problems and vitamin assays. Its essential value is in its very clear exposition of the principles of canning and in the full details of the methods used in the laboratory to control the varied stages in canning practice.

Canning in the last 50 years has gradually passed from rule of thumb methods to procedures based upon exact scientific knowledge and their application. All these methods are well brought out in this valuable book. Of the many stages in canning the most important is the heat treatment known as "Processing." Originally, this was very much based on practical experience and the many food poisoning outbreaks from the products showed up its inefficiency and unreliability. Gradually this has all been replaced by accurate methods based upon two groups of studies—heat penetration rates and the factors which influence them and the thermal death points of bacteria. Both are complicated, particularly the second, for the pH and other factors in the foods markedly influence these thermal death ranges. From these studies reliable safety times and temperatures of heating have been evolved for all products. It is this scientific work which has made canned foods safer from the risk of conveying food poisoning than fresh foods.

The major part of the book is devoted to methods of control in the laboratory and, while some elementary methods are described, readily obtainable from other sources, many specially apply to canning control.

The book will be found invaluable to all workers concerned with laboratory control of canning practice. It also can be read with profit by medical officers of health and others who wish to understand the principles which underlie sound canning as carried out to-day. The numerous illustrations add to the value of the book, while the exposition of the authors is particularly clear and very few errors have been noted.

**Public Health Engineering—Vol. I.** By EARLE B. PHELPS and collaborating authors. (Pp. 655. Illustrated. Price 45s.). London: Chapman & Hall, Ltd., 1948.

This volume is written primarily for American engineers in order to teach—in the light of present-day knowledge of sanitation—what to design and why. It is, as its title implies, "Public Health for Engineers." At the same time, it might also be described as "Engineering for Medical Officers of Health."

Although certain sections of the book are not very applicable to conditions in the United Kingdom, yet the remainder of the book is so lucid that it should find a place on the book shelves of a progressive medical officer, and to be called into use particularly when the advance of public sanitation is no longer hampered by economies and austerity, but can be carried out in American style.

**A Psychiatrist Looks at Tuberculosis.** By ERIC WITTKOWER, M.D. With an introduction by John Rickman. (Pp. 144.). London: National Association for the Prevention of Tuberculosis, 1949.

Despite the enormous number of contributions to the literature of tuberculosis, only the coastline of this disease has been mapped out and a great part of the "interior" still remains largely unexplored territory. The importance of the psychological aspects of a disease always yield valuable material, and the N.A.P.T. is therefore to be congratulated on commissioning Dr. Eric Wittkower specifically to investigate this problem.

The product of two and a half years' work in a number of sanatoria and chest clinics is now presented in this slim volume. Perhaps the outstanding compliment that can be paid to this work is the authenticity and realism observed in each patient's self-portrait which emerges in the course of interview with the analyst. Moreover, the author is to be congratulated on the pithiness and brevity of the narrative which at times reads as racily as a Damon Runyan short story. Lucidity and an absence of technical jargon emerge as the dual qualities so rarely to be observed in the writings of medical colleagues.

Yet this monograph has its defects. As one turns the pages one is only too painfully aware of the lack of definition of terms that has contributed so much to the empiricism of psychiatry. In discussing the behaviour of patients and their reaction to their symptoms and diagnosis, Dr. Wittkower has classified some of these reactions as being of "mild" and others of "severe concern." But precisely what connotation the author attaches to either of these groups is a matter for conjecture by the reader. This is especially important, for if the reader is to be guided by the subjective and perhaps arbitrary decisions of the author as to the category in which the borderline case should be included, little scientific reliance can be placed on the findings. Again, in the chapter on the "Pre-morbid

Personality of the Tuberculous," Dr. Wittkower breaks up his cases into a number of differing types, viz., over-dependent, leaning, asserters of independence, rebellious, self-drivers, conflict harassed, etc. This is interesting, but it would be even more interesting, and certainly much more valuable, if we knew how the proportion of each of these groups compared with a control group of corresponding age, sex, social level, occupation and family history. In other words, this volume should be the solution to some of the problems which have confronted most phthisiologists at one time or another—viz., is there a higher percentage of dependent personalities among the tuberculous than among a control group in the normal population, or a further group suffering from chronic heart disease, and are these differences between the groups significant or otherwise? We are sadly afraid that Dr. Wittkower has not answered a number of these questions to our satisfaction.

Despite these imperfections, this most readable and stimulating volume does represent an honest attempt to find an explanation for many of the perplexing psychological patterns one encounters in studying tuberculosis.

The second edition will profit by a little more devotion to the statistical, rather than the psychiatric method of analysis of data.

## OBITUARY

ALFRED ERNEST REMMETT WEAVER, M.D. (B'HAM.), D.P.H.

We regret to record the death after a short illness, on November 15th, of Dr. A. E. Remmett Weaver, formerly medical officer of health of the urban district of Weston-super-Mare.

We are indebted to Dr. Cyril Banks for the following tribute:—

He was born 76 years ago in Birmingham and educated at King Edward's School. While acting as secretary to Mr. Priestley Smith, the oculist, he studied science at evening classes and later himself taught chemistry at various night schools in order to pay his way as a medical student. He graduated in medicine from Birmingham University in 1904 and became M.D. in 1906.

After holding house appointments at the Queen's Hospital, Birmingham, he was for a time in general practice at Cradley Heath, during which period he studied for, and obtained, the D.P.H. in 1908. Turning to public health as a career, he was for a time School Medical Officer of Health and Assistant M.O.H. at Coventry under the late Dr. E. H. Snell. Later, as M.O.H. for Abertillery, he did some very good work, but was perhaps geographically rather badly placed for gaining the rapid promotion which his knowledge and experience warranted. He moved to Yeovil as M.O.H. and in 1919 joined Dr. (later Sir William) Savage as deputy County M.O.H. for Somerset, residing at Weston-super-Mare. The proposed removal of the county offices to Taunton did not suit him and he accepted the position of Medical Officer of Health for Weston-super-Mare when it became vacant in 1929, and continued in this post until his retirement in 1941. He was greatly respected in the town, was a prominent member of the Rotary Club and also took part in much social and religious work in the district. He was twice married but had no children.

He was a man of wide reading and great knowledge, with a generous and friendly nature. He was a Fellow of the Society from 1930.

## Services Hygiene Group

## NOTICE

A meeting of the Group will be held in the Hastings Hall, B.M.A. House, Tavistock Square, London, W.C.1, on Friday, December 16th, 1949, at 5.30 p.m., when Air Commodore J. M. Kilpatrick, O.B.E., will deliver his presidential address entitled "Public Health in Relation to Aviation."

The following programme has been arranged for 1950:—

January 27th—Annual Dinner.

February —,—"A Lecture on 'The Medical Aspects of Atomic Radiation.'"

March —,—"Visit to Millbank."

April 14th (?),—"Visit to Port of London."

May 20th—"Visit to Cow and Gate Factory, Wincanton."

June —,—"Joint meeting with Association of Industrial Medical Officers."

Further dates and particulars will be announced later.

G. M. FRIZELLE,

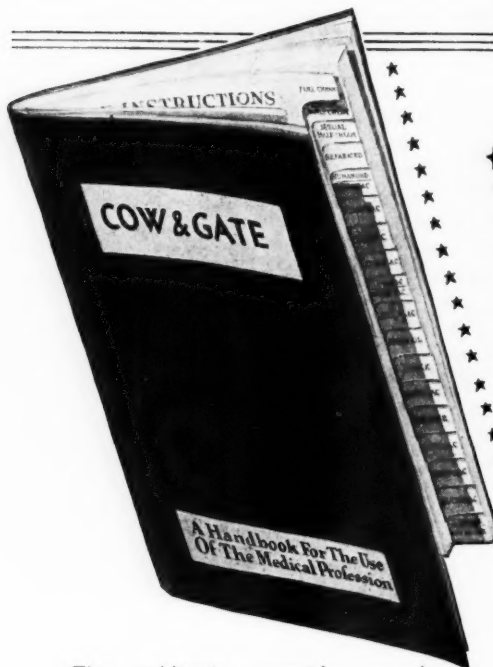
Hon. Secretary.

London School of Hygiene and Tropical Medicine,

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## SOCIETY OF MEDICAL OFFICERS OF HEALTH NORTHERN BRANCH

*President:* Dr. E. F. Dawson-Walker (M.O.H., Easington R.D.).  
*Hon. Secretary:* Dr. W. S. Walton, G.M. (M.O.H., Newcastle-upon-Tyne C.B.).

The Summer Meeting of the Branch was held at Glaxo Laboratories, Barnard Castle, on Thursday, July 14th, 1949. Dr. A. S. Hebblethwaite presided and 18 members and two guests attended.

*President of the Branch, 1949-50.*—It was unanimously agreed that Dr. E. F. Dawson-Walker be elected President of the Branch for the session 1949-50.

*Vice-President of the Branch.*—It was unanimously agreed that Dr. M. Dewell be elected Vice-President of the Branch.

*Hon. Secretary and Treasurer.*—It was unanimously agreed that Dr. W. S. Walton be re-elected.

*Branch's Representative on Council of Society.*—Dr. A. S. Hebblethwaite was re-elected.

*Representatives on the British Medical Association.*—(1) Dr. J. Grant and Dr. W. J. Pierce were re-elected to serve on the Council of the North of England Branch of the British Medical Association. (2) The election of two representatives on the Executive Committee of the Newcastle-upon-Tyne Division of the British Medical Association was deferred until the next meeting.

*Representatives of the North of England Branch, B.M.A., on the Council of the Branch.*—It was decided to invite the North of England Branch of the British Medical Association to elect two general practitioner representatives.

*Tuberculosis Group Committee.*—It was agreed that Dr. J. V. Walker be elected as the Branch's representative.

*Hospital Management Committees.*—On a motion by Dr. Grant, seconded by Dr. Elder, the Hon. Secretary was instructed to forward to headquarters the following resolution:—

"That the Northern Branch views with considerable apprehension the increasing amount of lay officer control in the Hospital Management Section of the National Health Service, and asks the Council to register a strong protest against the passing over of the Medical Superintendent's duties to lay officers."

### Visit to Glaxo Laboratories Works

At the conclusion of the meeting the members were entertained to lunch at the hotel by the management of the Glaxo Laboratories, Ltd. Col. L. A. Gullick, General Manager, presided.

During the afternoon the visitors from this Branch were divided into three parties and toured the extensive works associated with the production of penicillin. The chief impressions gained were, firstly, the general efficiency of the laboratories and process departments; secondly, the amount of work done; and, lastly, the excellent standard of factory hygiene (ventilation, cleanliness, washing facilities, etc.), even in places away from the aseptic technique of the actual handling and preparation of the penicillin products.

After tea officers of the departments answered questions and the visit was concluded by a warm vote of thanks proposed by Dr. A. S. Hebblethwaite on behalf of the Branch and replied to by Col. Gullick on behalf of Glaxo, Ltd.

## YORKSHIRE BRANCH

*President (1948-49):* Dr. A. L. Taylor (M.O.H., Rothwell and Stanley U.D.s.; 1949-50), Dr. C. Fraser Brockington (C.M.O.H., West Riding).

*Hon. Secretary:* Dr. J. M. Gibson (M.O.H., Huddersfield C.B.).

An ordinary meeting of the Branch was held in the Civic Hall, Leeds, on Friday, April 29th, 1949, at 2.30 p.m., with the President in the chair. Twenty-six members and five visitors attended.

This was preceded by a meeting of the Council, at which seven members were present.

Dr. R. J. Dodds, Deputy M.O.H., Wakefield, who was attending a Branch meeting for the first time, was welcomed by the President.

*Presentation of a Lecture.*—Prof. J. Johnstone Jervis, M.D., D.P.H., presented an oak lectern to the Branch for the use of speakers at the monthly meetings. He said he had overheard a conversation some months ago between the Past President of the Branch (Dr. D. D. Payne) and the hon. Secretary, in which the need for something of this kind was mentioned, and on his retirement from the Public Health Service he welcomed the opportunity to present a lectern to the Yorkshire Branch, not only in recognition of the help and pleasure he had derived from his membership of it but also as a token of his very high regard for the Hon. Secretary. The meetings of the Branch had been a stimulus to him in his work, and he had appreciated the friendship of the members. He had been associated with the Branch for over 30 years—during that time there had been several secretaries, all eminent men, who had given good service, but, without in any way discrediting the work of any of them, he wished to state that Dr. Gibson had

surpassed them all. He personally had enjoyed his friendship, and he knew that Dr. Gibson was held in the highest regard not only by the members of the Yorkshire Branch but also on the Council of the Society, where he had given valuable service as Chairman of the General Purposes Committee. As a tribute to Dr. Gibson he wished to affix a plate on the lectern bearing the following inscription:—

"The John Gibson Lectern—presented to the Yorkshire Branch of the Society of Medical Officers of Health by J. Johnstone Jervis, April 29th, 1949."

### Prophylaxis—Particularly in Relationship to Whooping Cough

Dr. J. Ungar, of Glaxo Laboratories, Ltd., then read a paper on the above title. Surveying the available literature on successful immunisation against pertussis, particularly in the U.S.A. and Canada, the speaker discussed the likely reasons for the failure of clinical trials to show a positive result in pertussis vaccination in this country. Laboratory tests, however elaborate, were able to give only a general indication of the protective value of a vaccine as reflected in experimental animals or in the test-tube. The ultimate criterion of efficiency of the product was the incidence and severity of the disease following exposure to infection in immunised and non-immunised children.

An account of the experimental work in laboratories showed how a number of factors influenced the quality of the vaccine. To get effective vaccine against pertussis it was essential to use proper strains of *H. pertussis* (phase 1, agglutinable, virulent to laboratory animals). Growing on suitable media for a period of 48 hours and washing off with saline gave suspensions of the required potency. Killing with formalin and adjusting the concentration to 20,000 million organisms per c.c. were the next stages. Finally, precipitation of the vaccine with aluminium phosphate offered certain advantages, as smaller doses were required to achieve a solid immunity and the precipitated vaccine could be advantageously combined with aluminium precipitated diphtheria toxoid, which enabled simultaneous vaccination against pertussis and diphtheria to be performed. There was ample evidence, laboratory and clinical, that combined immunisation gave not only a good response to both fractions of the vaccine but that the immunity evoked (particularly against diphtheria) was even higher than when the antigens were given separately. It was essential to choose the right doses (about 40 to 50,000 million organisms were sufficient), and by spacing the three injections the incidence of untoward reactions was diminished if the method of administration was correct; with proper-sized needles (about 18) and the vaccine being injected intramuscularly. There was good clinical evidence that immunity was established about two months after the last injection. It was obvious that the earlier immunisation started the better the results would be. Proof of acquired immunity in children could be shown either by serological methods like agglutination, or by complement fixation or skin tests; the last method, particularly, using the agglutinin fraction, promised to give reliable results.

The speaker referred to the prophylactic treatment of contact cases with human or animal immune serum, and warned against the indiscriminate use of this serum in patients. Although there were not yet fully approved laboratory methods to prove the efficiency of different vaccines, they could be used to eliminate ineffective antigens. Clinical trials had adequately demonstrated that, given a proper vaccine, children could be effectively immunised against whooping cough. The incidence of pertussis was lowered after immunisation with adequate doses, the attack rate was lowered in the immunised, and the disease ran a milder course when immunised children contracted it.

The President wondered if he might have assurance on two points:—(1) Was the prophylactic in use at present really effective? He knew that it was much better than its predecessors, but he wondered if it could, at this stage, be really effective.

(2) Could he have an assurance that the present prophylactic gives little reaction? This he considered an important point, particularly if it was to be combined with the diphtheria prophylactic. At present we could assure parents that there is very little reaction from diphtheria immunisation. It would be unfortunate if, in combining the two, the number of reactions increased considerably, as this would reduce the number of acceptances.

In reply, Dr. Ungar said that the present prophylactic had proved most reliable by the animal test. They had reason to believe that it would be equally efficient when used with human beings, but they were dependent upon the clinical trials to prove this. With reference to reactions, he had to admit that there was a higher incidence when the combined vaccine was used. He would like to point out, however, that the reaction depended to a large extent upon how the inoculation was given. It should always be given intramuscularly, not subcutaneously.

Dr. W. G. Evans commented upon the fact that diphtheria appeared to have increased amongst very young children since



immunisation has been conferred upon older children. As it took several months for a high degree of immunity to be acquired after inoculation, would it help to give prophylactic injections against whooping cough to mothers during pregnancy? He would also like to know if a baby in the first few months responded to antigen injection. Dr. Ungar replied that from three months response was definite. He would not recommend inoculations to be given before that time. In Canada ante-natal injections had been tried, and possibly a case could be made for this practice, but the laboratory evidence was not helpful.

On this point, Dr. C. W. Dixon pointed out that a mother might have whooping cough without giving protection to her child. He did not see, therefore, how immunisation during the ante-natal period could give protection. In any method of trials it was always difficult to weigh up results, owing to difficulty in diagnosis.

In reply to a question by Dr. Smithson, Dr. Ungar said he would recommend full immunisation to two doses (at three to four weeks' interval) at six months. This should give protection for approximately three years. He would, therefore, recommend a further "boosting" dose at the age of three and a half years; then another at six years. This should be sufficient to give protection during the school life.

Dr. Hynd asked if there was any reliable test for the potency of vaccines. Dr. Ungar said that these could be tested by estimating the protection they gave against virulent strains of the organism. Mice, or rabbits, could be immunised with each batch, and then infected by a non-virulent strain. The amount of injection given was graded into three amounts—high, medium, and low, representing a third of the highest dose. If protection was not given in the lowest of these the vaccine was discarded. No definite standard had been laid down to guide manufacturers, but one based on this procedure had been agreed voluntarily.

Dr. Smithson referred to a discussion which had taken place amongst the Divisional Medical Officers of the West Riding as to whether vaccination against whooping cough should be introduced in their areas. They decided that no action should be taken in view of the Medical Research Council's pronouncement that immunisation against whooping cough had not reached a stage comparable with that against diphtheria. He would like to ask Dr. Ungar the direct question, "Has the standard of reliability reached a stage when medical officers of health can give a whole-hearted recommendation for immunisation against the disease?"

Dr. Ungar admitted that the control of antigen in whooping cough was not so definite as in diphtheria. No vaccines had yet reached the stage of giving 100 per cent. immunity, although the prophylactic used in diphtheria had now almost reached that stage. The vaccine used in whooping cough had, in his opinion, reached the stage diphtheria was at some years ago, and might be put in figures at 60%. He described an experiment carried out in one institution where one group of children had received diphtheria plus whooping-cough vaccination; the other group diphtheria vaccination only. An outbreak of whooping cough occurred, and those who had received the combined immunisation escaped the infection.

Dr. Allardice asked if in Dr. Ungar's opinion there was any risk to non-immunised when a community is partially immunised. He wondered if the virulence went up or down in such a community. Dr. Ungar said there was no evidence regarding the effect of immunisation upon virulence, and there was very little evidence to show that pertussis carriers existed at all.

Dr. Reeves asked if there was a danger of encephalitis following pertussis vaccination as in vaccination against smallpox.

Dr. Ungar admitted that there was a possibility of this. In such cases the encephalitis probably resulted from a stimulation of a latent virus. In view of this it would be unwise to immunise when poliomyelitis was prevalent.

A hearty vote of thanks was proposed to Dr. Ungar on the motion of Dr. Holt, who referred to the statement made by the Medical Research Council and thought that as medical officers of health we should not wait for any pronouncement by such a body. They were doing the field work in this connection and it was their duty to collect statistics and prove, or disprove, the value of a vaccination of this kind. In his own experience the vaccination now used was perfectly safe, and out of more than 2,000 vaccinations carried out in the last four years he had found less reactions than in connection with diphtheria immunisation.

#### MATERNITY AND CHILD WELFARE GROUP

President: Dr. J. D. Kershaw (M.O.H., Colchester M.S.; Divl. M.O., N.E. Essex).

Hon. Secretary: Dr. Kathleen Hart (Senior Asst. M.O., Ealing and Acton Div., Middlesex).

Hon. Asst. Secretary: Dr. Mabel Dodds (A.M.O.H., Harrow Div., Middlesex).

A general meeting of the Group was held on Friday, October 7th, 1949, at 7.45 p.m., at the London School of Hygiene and Tropical Medicine. Dr. Freeman presided and 25 members were present. The minutes of the last meeting were read and confirmed.

Apologies for absence were received from 14 members. Dr. Freeman welcomed Dr. Kershaw as President for the coming year, and installed him in the chair.

#### A Visit to Iran

Dr. Jean Mackintosh (Birmingham) gave an amusing and instructive talk on her visit to Iran (Persia) early this year, which was made at the invitation of the British Council.

The journey was made by air and Dr. Mackintosh gave a lively description of places of interest en route—of sight-seeing in Rome, passing over the crater of Vesuvius, a night at Nicosia in Cyprus, and the final arrival at Tehran.

Iran consists of a coastal reef round the Persian Gulf and a high plateau surrounded by mountains, many of which are covered with snow all the year round. The population is probably about 15,000,000.

Water is very scarce, and in the towns it is led through the streets in open gutters at the side of the roadways. From there it goes into the basements of houses where it is stored. The Mohammedan believes that only running water is clean and that all running water is clean. So in the streets people are seen washing themselves and their clothing, as well as on occasion performing other natural functions in this running water, which later passes into the basements of houses to be used for household purposes. Among the people there are only a small, although growing, number of persons who might be called middle class as it is known in this country. There are a comparatively small number of very rich people and the vast majority of the rest of the population are very poor and often under-nourished. There are no statistics of population, births and deaths, but the general impression seems to be that the infant death-rate is probably about 500 per 1,000.

The Government have a seven-year plan covering all aspects of life, in which public health has its place.

There is great difficulty in serving the country with an adequate supply of properly qualified medical practitioners, who all flock to the big towns. Owing to the poverty of the people and the distances between villages, it is impossible for doctors to make a living in the country without a subsidy from the State. Many of the doctors have had no training apart from serving an apprenticeship with an older man, who himself received his training in a similar way. In an effort to overcome these difficulties a scheme has been evolved for subsidising medical students. The medical school at Tehran is in a new building and is very elaborately equipped. The majority of the staff of professors have been trained abroad, mainly in France and the United States.

Hospitals are few in relation to the potential number of patients—and all that were seen by Dr. Mackintosh were very overcrowded. Nursing training has been almost non-existent, but a group of British nurses are establishing a school of nursing in Tehran. Operating-theatre equipment is often very sparse, and there is very little general anaesthesia, most operations being done under spinal anaesthetics.

Even so, men and women were met who were filled with energy and enthusiasm and who were making superhuman efforts to overcome these difficult conditions.

Tuberculosis is tending to spread, though there is very little bovine tuberculosis in the country, and, until the recent war, there was comparatively little human tuberculosis.

In Tehran there are possibly a dozen child welfare centres. These are at a stage at which our centres were 50 years ago. There is usually a doctor in attendance assisted by women, sometimes with some nursing experience. Advice is given, and food, soap and clothing are distributed free. The numbers on the registers have to be strictly limited owing to lack of funds.

In Iran the vast majority of women breast-feed their babies, but even so, owing to the lack of sanitary facilities and the ignorance of elementary hygiene, many children die of diarrhoea.

A vote of thanks to Dr. Mackintosh was proposed by Dr. Saunders-Jacobs and was carried with acclamation.

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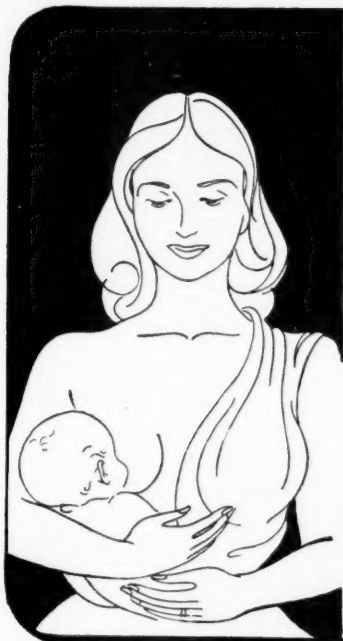
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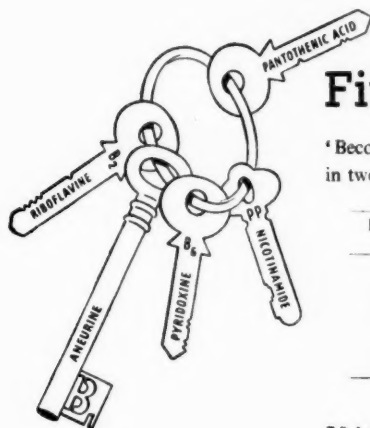
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Tablets are sugar-coated and issued in bottles of 25, 100 and 500. 'Becosym' for injection (intramuscular or intravenous) is stable and well-tolerated and is issued in boxes of 6 and 50 twin-ampoules.

ROCHE PRODUCTS LTD., WELWYN GARDEN CITY, HERTS

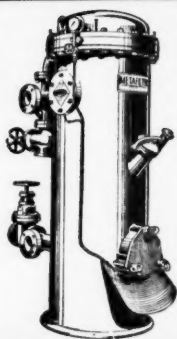
Scottish Depot: 665, Great Western Road, Glasgow, W.2

## Safe Drinking Water

The tens of millions of the Allied armies and air forces were protected from infection by their drinking water being made safe by the Metafilter.

The method is simple and sure and the filter is completely cleaned in a few minutes by simple reversal.

Sizes from 1 gallon to 10,000 gallons per hour.



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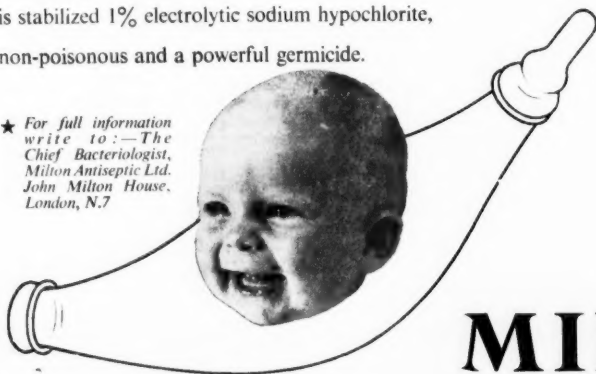
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## STERILIZE *feeding bottles and teats with*

The Milton method is the safe and simple way to ensure infection-free bottles and teats, protected between feeds from flies, dust, dirt and breaking. Milton is stabilized 1% electrolytic sodium hypochlorite, non-poisonous and a powerful germicide.

★ For full information write to:—The Chief Bacteriologist, Milton Antiseptic Ltd. John Milton House, London, N.7



# MILTON

# INTERIOR CLEANING



**COMPROX** is the modern made-for-all-work detergent—equally efficient in hard or soft water — non-poisonous, non-irritant — safe on fine fabrics and highly glazed surfaces — deadly to grease and difficult stains. Public authorities find Comprox gets through scores of chores, from furniture and floor cleaning to washing-up and washing clothes. They say it's a great saving when this one detergent does so many jobs so well.

Comprox users find all floors cleaner, carpets brighter, whether hand-done or machined. Cleaners find Comprox easy to use and they like its pleasant odour.

## CANTEENS AND RESTAURANTS

Kitchen staffs say greasy pots rapidly come clean — glasses sparkle. Just a little Comprox and hot water! They add Comprox to spread disinfectants further — Comprox keeps the whole place clean.

## LAUNDRIES AND PUBLIC BATHS

Regular users of Comprox find it washes all fabrics quickly, safely, thoroughly — specially suitable for woollens, overalls and dungarees. They find it most effective, too, for cleaning tiled, enamelled and other surfaces in public baths, lavatories and washrooms.

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**IRANO PRODUCTS LIMITED**  
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53, BOTHWELL STREET, GLASGOW, C.2

11, ST. JOHN'S SQUARE, CARDIFF.

NO. 1, THE CRESCENT, SALFORD 5, MANCHESTER.

They will gladly arrange a **FREE TRIAL** on request.

**COMPROX** is marketed by  
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# Why 'Ribena' in Acute Infections?

Because in acute febrile conditions such as pneumonia, diphtheria and rheumatic fever the blood vitamin-C level is markedly reduced, as is excretion of the vitamin by the kidneys.

Because it is believed that there is an important relationship between ascorbic acid and immunological reactions, as indicated, for example, in the lowering of resistance to diphtheria toxin effected by hypovitaminosis-C.

Because, on the practical side, good results are constantly being reported from the use of natural vitamin C, in the form of 'Ribena' blackcurrant syrup in rheumatic fever, scarlet fever, whooping cough, pneumonia and toxic diphtheria. More detailed information will be gladly supplied on request.

'Ribena' is the pure undiluted juice of fresh ripe blackcurrants with sugar, in the form of a delicious syrup. Being freed from all cellular structure of the fruit, it will not upset the most delicate stomach. It is particularly rich in natural vitamin C (not less than 20 mgm. per fluid ounce) and associated factors.

## Ribena

(RIBES SYRUP)

BLACKCURRANT SYRUP

H. W. Carter & Co. Ltd. Dept. 3N, The Royal Forest Factory, Colford, Glos.

*Enq.—Inquiries should be addressed to Proprietaries (Eire), Ltd., 17, 22, Parkgate Street, Dublin.*

# 'Semplolia'

## D. D. T.

### HAIR EMULSION

*... a new  
effective treatment  
for head lice...*

A new formula Hair Emulsion, containing D.D.T. as the active ingredient, for the control of head lice. Pleasantly perfumed and simple to use.

Apply by massaging into the scalp. No combing is required except for the removal of dead lice. Treatment is economical—individual application four drachms only.

Sample, details of packages for clinical use and home treatment and prices on application.

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# LACTAGOL

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# *Trends in Diphtheria Prophylaxis*

The low incidence of diphtheria in Great Britain today is due in large measure to the use of 'Wellcome' Diphtheria Prophylactic A.P.T. Used for the protection of more than 7,000,000 children immunised under the Government diphtheria immunisation scheme, this preparation was discovered and first made at The Wellcome Research Laboratories. It contains a considerable amount of bacillary protein in addition to the specific toxoid, and some workers have suggested that reactions in older children and adults may be due to this. Highly purified specific toxoid has been prepared by a new method devised at The Wellcome Research Laboratories. It is adsorbed on to Aluminium Phosphate. This new product 'Wellcome' Diphtheria Prophylactic P.T.A.P. is offered as an alternative to A.P.T. It:

- (1) contains less bacterial protein than does A.P.T. and may therefore cause less reactions in older children and adults.
- (2) produces the same levels of circulating antitoxin as does A.P.T., when used by a two-dose method.

The rôle played by the bacillary protein in the production of "complete" immunity is not known, and it must be regarded as possible that this material, present in A.P.T., plays a valuable part in preventing diphtheria in actively immunised subjects. Further trials are in progress to establish whether P.T.A.P. or A.P.T. is the better prophylactic.

## 'WELLCOME' DIPHThERIA PROPHYLACTICS

PREPARED AT THE WELLCOME RESEARCH LABORATORIES

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